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ABSTRACT

The result of a research conference, the document contains a collection of short studies and implementation experiences of leaders in the field of multiple talent teaching. Contributors represent 12 states: Alabama, Florida, Idaho, Illinois, Iowa, Kentucky, Minnesota, New Hampshire, Texas, Utah, Wisconsin, and Wyoming. Each presentation generally touches on six points: (1) how their program was started and when and how financed; (2) coverage of teachers, schools, districts, etc.; (3) evaluation measures and findings--assessment of success and failures; (4) contributions made to Multiple Talent Teaching; (5) recommendations to those interested in adopting teaching for multiple talents; and (6) prospects and issues ahead. Among the programs considered are Project Impact, Project Implode, Talents Unlimited Project, Project Reach, and Teacher Corps Project. Entries include the following: "New Measures Relevant to Talent-Focused Education" (R. Ellison); "Talents Unlimited in Pre-Service Education" (C. Schlichter); "Eleven Multiple Talent Elementary Schools" (B. Thomas); "A Teacher Corps Project on Multiple Talents" (J. Hainsworth); "Idaho's Awakening to Multiple Talent Teaching" (W. Freeman); "Underlying Bases of Multiple Talent Teaching" (C. Taylor); and "A Theoretical Model for Training of Multiple Talent Teachers (J. Juntune and L. Worthley). (SBH)

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TEACHING FOR TALENTS AND GIFTS 1978 STATUS

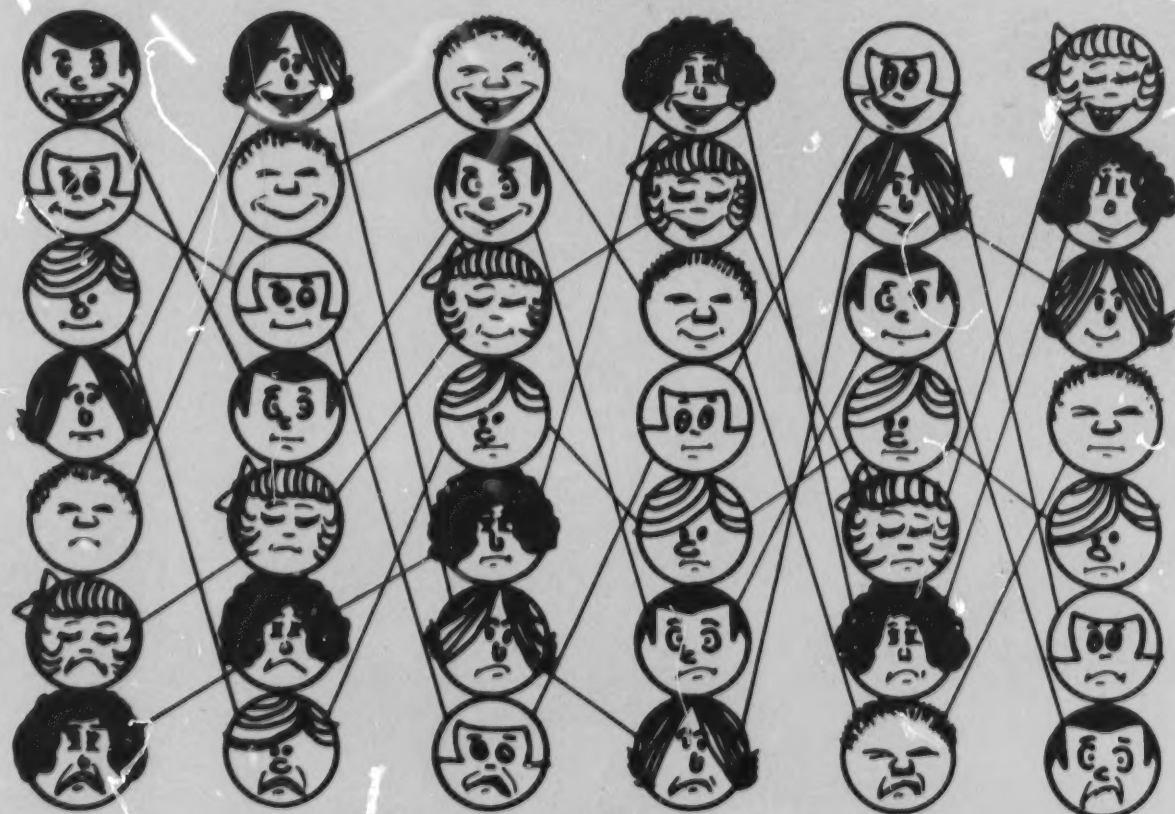
DEVELOPING AND IMPLEMENTING MULTIPLE TALENT TEACHING

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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MULTIPL

POLES



Academic

Creative

Planning

Communicating

Forecasting

Decision-making

EC114840

Teaching for Talents and Gifts: 1978 Status

Developing and Implementing
Multiple Talent Teaching

Edited by

Calvin W. Taylor

Professor of Psychology
University of Utah

December 1978

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PREFACE

This is a collection of short studies and implementation experiences. Each is told by a person who has experienced the toil, frustration, and the exhilaration of helping children learn and function to the fullest. They are all telling their stories so that others may share in these experiences and hopefully create similar ones of their own.

As with any collection, there is a reason these are together. All were working with a common model of teaching for multiple talents, i.e., of being talent developers, not just knowledge dispensers. In this case the common theme is simply: POTENTIALLY ALL STUDENTS ARE GIFTED. Some of the people began by working with children who had been identified as gifted or talented. In such cases, the program materials, the tests, and the experiences were designed originally to help the gifted student develop his or her talents to the fullest. From their central idea and their experiences, they have grown in the conviction that there are many talents and gifts and that practically every person is highly gifted in something. That's why you will read a lot about "Talents Unlimited" and "Multiple Talents." We have all simply become convinced that potentially every child, every person, is talented and excels in something.

We are convinced of this because our research and our experiences tell us so. The multiple talent approach has been used successfully in all kinds of classrooms -- with gifted children, in Title I disadvantaged schools, with emotionally disturbed, with mentally retarded, in classes of "average" youngsters and, of course, in classrooms with children of very mixed abilities.

The people telling the stories came from a dozen states. With funds from their own organizations or at their own expense they came to the University Research Park, University of Utah on February 15-17, 1977 in response to our invitation sent to leaders in multiple talent teaching in nearly half the states. The main intent of the meeting was for everyone to get acquainted personally with everyone else, where they came from, where they can be located, what kinds of things they have done with talents, and what kinds of things they are now doing and are planning to do. As one outcome, we have learned that multiple talent teaching is occurring to some extent in one or more classrooms or districts in at least three-fourths of our states.

Thus, the stories are about people of different backgrounds, abilities, and interests, so they have varying things to communicate. Those concerned about broad applicability of the teaching of multiple talents in Title I and in other school programs, might be interested especially on page 3, on page 10-11, my pages 110-114, and on Carol Schlichter's pages 61-62. Historians interested in a brief recounting

of how the multiple talents approach has spread might read my introductions to most presentations and pages 115-118 by Loran Reynolds (including his cited dissertation). I have briefly capsulized the intellectual history of Multiple Talent Teaching on pages 95 to 101. For the evaluators, there are data on outcomes and affects of the Multiple Talent approach, especially on pages 3, 11, 17, 21-23, 26-32, 35-37, 44-46, 48-52, 55, 60, 65-67, 71, 78-79, 82, and 86-89.

Most of all, the stories talk about initiating and selling a program -- problems of in-service training, materials development, and reporting of project and student progress are talked about throughout. Teachers, Principals, Administrators, and Parents are seen reacting to the selling of a multiple talent program and usually embracing the innovation. Curiously, we never really had to sell the idea to kids. They were ready. Once they tried it, they liked it.

Our hope has been fulfilled that we could record and transcribe everything and produce a volume from it. The transcription from tape recordings provided a rough first draft which we then sent to participants to put into final form, modifying and elaborating as they saw fit. Each presentation generally touches on six points, although the structure is not rigid: 1) how their program was started and when and how financed; 2) coverage of teachers, schools, districts, etc., 3) evaluation measures and findings -- assessment of success and failures; 4) contributions made to Multiple Talent Teaching; 5) recommendations to those interested in adopting Teaching for Multiple Talents; and 6) prospects and issues ahead. In a few cases speakers have added reflections on their visits to classrooms in the Salt Lake area.

In publishing over 10 volumes of research conferences on creativity and on architectural psychology, I have produced long reports, edited to be readable and exciting, which still approach being a verbatim writeup of the presentations and discussions as they occurred. To me this style has proved to be a more effective communicator and stimulator of increased effort in a field than has any shortened, polished scholarly writeup, too often resembling the unexciting minutes of a meeting. The longer version retains the freshness of expression so that later readers, like first-hand listeners, approach having the full experiences described by the frontlining innovators and leading implementors in their reports and discussions. This reporting style almost produced experiential education for the readers; you get a feeling of the phenomena experienced by each presenter as well as a reaction of adding your own comments to the discussion and of asking questions to sharpen your own insights. You have a more full experience from reading this type of report than from reading a report in condensed form from which you learn, almost third-hand, the concepts and generalizations extracted and restated from such meetings.

A few pages about some of the best classroom demonstrations visited on the second and third days are also included for the

reader. Hindsight, the meetings of the entire group or subgroups should have continued into the second day because of the many things starting to emerge.

One example which arose some time later was: "Thanks to several creativity workers, there is a distinct move by thinkers in the 'gifted department' to encompass more of the creative elements of the total intellect. Why were they so afraid, I wonder, to be involved in the development of creative talents? After all, these talent areas are the ones that last the longest, delve the deepest, and transfer more readily than any of the traditional academic types."

Toynbee supports this idea by calling creativity the history making talent. Will Durant states that the most essential thing in the universe is creative power (Parade, August 6, 1978). Earlier Parade noted President Carter's spontaneous statement that literally hundreds of thousands of young people in our country, due to their poverty or their families, have not had a chance to nourish or develop their innate talents. Paul Geerlings said locally that the human mind is the most underdeveloped resource in the world.

Another quote: "The best experience of the summer was our two-week Summer Enrichment Workshop for Gifted/Creative/Talented kids. Their multiple talents were showing and flowing.

Other "quotable quotes" which Alaska teachers expressed while learning to use the multiple talent approach are: "I have often sensed that academic talent is only a 'scratch' on the surface. I have felt uncomfortable when I have read or heard about programs that only dealt with the academically gifted (superior in knowledge) students. Something inside me has kept saying 'There has to be more!'"

"Teachers can smother children and their talent capacities." "I will try the double-barrelled curriculum approach of being a multi-talent developer as well as a multi-knowledge dispenser."

"I want to develop in my students the ability to think, not just babble what I have babbled to them;" "I will let my students have productive thinking processes which come naturally;" "I will implement by developing specific talents, using subject matter as fodder;" and "I will implement by changing current learning centers to function junctions."

"Those individuals whose assets are not noted and whose gifts are not encouraged cannot help but be injured. This injury may result in loss of self-esteem which could lead to all the effects we so deplore today: vandalism, drugs, alcohol, violence, etc. Thus, not only aren't these people making contributions to society; they are damaging it by their demands on its social welfare, law enforcement, and other resources."

The reader will have to remember that this was a group of participants who were already experienced in running classrooms in Multiple Talent ways. Many of them already knew of each other, although they may not have met before. In this field we have tried to use a commonly understood language most of the time. Nonetheless, some technical language has been developed which we have tried not to use too much in our conversation; however, from time to time some phrases do creep in. Two in particular deserve some explanation: Divergent Thinking (or Production) and Convergent Thinking (or Production).

Divergent Thinking involves a broad search inwardly and outwardly, usually in an open problem in which there are a number of possible answers. It is the production (or generation) of many logical alternatives or options. Fluency in thinking up a sheer quantity of answers is the name of the game. (Simply, it is an expanding or "boiling up" of lots of possibilities.)

Convergent Thinking, on the other hand, is a focused search. The situation usually requires one particular answer so the task is to produce a best logical answer. (Simply, it requires reductive thinking, or "boiling things down" to fewer categories or options, or even reducing it all to only one category or answer.)

In each report the introductory comments are by the conference chairman. After that introduction, the symbol S. = particular speaker for that topic; and the symbol C. = any other participant making a comment or raising a question.

The totem-pole model with live students displayed in Figure 1 has been most valuable in illustrating the multiple talent approach. While the six broad talents in the Figure 1 totem poles are the ones most typically used, I have mentioned in my own paper several other possible totem-pole talents. There could be a gradually expanding list of talents for students to experience and to learn to use as they progress through many years of schooling. Such an expanding list can result from sustained talent research, leading to methods for teaching and testing for each new talent.

In another report to NIE by Frank Pratzner on Occupational Adaptability and Transferable Skills (H.E.W. Contract No. NE-C-00-3-0078, Information Series No. 129, The Ohio State University, January, 1978), I contributed the following final statement. In summary, I recommend that:

"the nation would not make a mistake in spending an extremely high percentage of its current public and private foundation funding in educational research, development, implementation, and measurement activities focused on multiple transferable attributes (or talents) in students. In fact, according to all indications the majority

of the foundation funding in education would be well spent upon attribute-focused education. It would not be more money down the same old drain with little or no change or improvement in what happens to students in classrooms. Instead it could bring about major improvement in all fields of education and training in the nation."

In the production of this volume, special recognition is well deserved by Cheryl Lopez and Lynne Petersen for the diligent work in transcribing the first draft from tape recordings and by Lynne Petersen for typing and retyping the final copy. The insightful encouragement and helpfulness of Robert Stump of NIE is acknowledged together with the continual support from Superintendent Walter Talbot and Bernarr Furse of our State Board of Education.

Since most of the work in this volume has not appeared before in published form, please write to each particular author (at the address in the List of Contributors) for any information desired.

Calvin W. Taylor
September, 1978

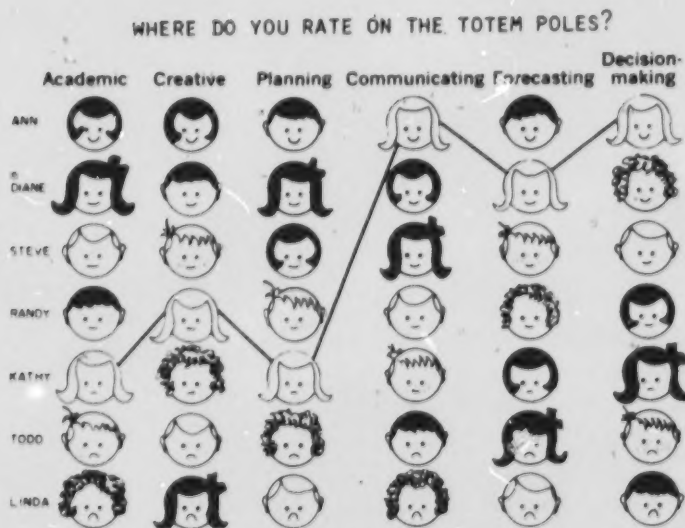


FIGURE 1. TAYLOR'S TALENT TOTEM POLES

TABLE OF CONTENTS

Welcome from State Superintendent Talbot Bernarr Furse	1
Granite's Early and Continuing Contributions Darrel Allington, Darrell Johnson, Ellen J. Williams, and Colleen Taft	3
Project Impact Ralph Norris, Elwin Nielsen, Bill Clark, and Helen Coe	20
Project Implode at Bella Vista Elementary School Gilbert Stevenson	38
New Measures Relevant to Talent-Focused Education Robert Ellison	48
Creativity in Laramie Mignon Hill and John Hill	53
Talents Unlimited Project Sara Waldrop	57
Talents Unlimited Needed in Pre-Service Education Carol Schlichter	61
Talents Unlimited Adopters:	
Minnesota Adopters of Talents Unlimited Edward Schramm and Coleen Yatckoske	62
Talents Unlimited Texas Style Anna Brodie and Ruth Foegelle	69
Illinois Adopters Joan Bertram	74
Project Reach Joyce Juntune	78
Eleven Multiple Talent Elementary Schools Betty Thomas	80
A Teacher Corps Project on Multiple Talents Jerome Hainsworth	85
Idaho's Awakening to Multiple Talent Teaching Winnie Freeman	90
	xv

TABLE OF CONTENTS (CONTINUED)

Talent Development in New Hampshire Leon Worthley	94
Underlying Bases of Multiple Talent Teaching Calvin W. Taylor	95
Historical Perspective of the Multiple Talent Approach Loran R. Reynolds	115
A Theoretical Model for Training of Multiple Talent Teachers Joyce Juntune and Leon Worthley	119
Summary of Major Subgroup Discussion Thaddeus S. Grimes	121
Discussion of Multiple Topics General Subgroup	125

WELCOME FROM STATE SUPERINTENDENT TALBOT

Bernarr Furse

S. I am pleased with the opportunity to meet with you and to bring greetings from the State Superintendent of Public Instruction, Walter D. Talbot. I know many of you have traveled great distances to come to Utah. We hope you will find the sessions rewarding and beneficial to you. We hope also that you will enjoy the setting of this conference in Salt Lake Valley and at the University Research Park in the conference room of the Biomedical Test Laboratory.

If I seem a little ill at ease it's because I always feel a little uncomfortable about introductions. Momentarily there, I didn't know what Cal -- Dr. Taylor -- would say in the way of introduction. However, my momentary discomfort has faded as I look upon this friendly audience and recognize friends of long standing and new friends made today -- prior to the meeting I met participants from Minnesota. For a short period while I was in military service, I had the opportunity to be stationed at St. Cloud's Teachers College in St. Cloud, Minnesota. Some of these new friends from Minnesota shared with me recollections of that delightful small city, its brisk climate and the lovely setting almost at the headwaters of the Mississippi River. I hope you leave this conference with memories of Salt Lake as pleasant as my recollections of Minnesota.

Dr. Talbot has asked that I meet with you and to offer the services of his office. At the moment Dr. Talbot is meeting with a legislative committee. At this time of the year, as the legislature meets, we are going in many different directions at the same time. Consequently, it is beyond the capabilities of Dr. Talbot to meet with all the legislative committees dealing with agency programs and budgets and to extend personal greetings to important groups such as this, which are meeting on educational matters.

As administrative assistant, I serve in a liaison role with the state legislature and the national congress. In essence, I'm a professional lobbyist for education. In this capacity, we have had great help and direct assistance from Dr. Taylor, in seeking legislative support for funding gifted and talented program in Utah. As a result, the Utah School Finance Act now has a provision funding gifted and talented programs in a modest manner. Dr. Taylor also serves as a facilitator for Dr. Talbot and our administration, with both agency personnel and school district personnel. He is to stimulate the multiple talent approach to education in the state. We feel that the state has not taken sufficient advantage of the resource that we have in Dr. Taylor. By utilizing him as a catalyst we hope to remedy our past shortcomings.

A few years ago I was a member of the Jordan School District Board of Education. During that time, with no credit to me, the district implemented the multiple talent approach in the Bella Vista Elementary School. This was largely the result of Dr. Taylor's efforts. Presently, Project Implode is having a significant impact on the total educational program in Jordan School District. More recently, Dr. Taylor is encouraging the state school office to cooperate with Mobile, Alabama in seeking a role for our state in the National Network Talents Unlimited Project.

Once again, greetings from the State Superintendent. If our office can assist you in any way to make your visit more beneficial, please call upon me. This invitation extends beyond the immediate focal point of your conference. Please contact my secretary, Carol Bronson, and describe briefly what assistance you need. If there is some help we can give to accomodate your interests, we will be happy to do it.

Taylor: Bernarr is one of what we call the "chosen people of Jordan." Of course in Utah, "chosen people" has a special meaning.

GRANITE'S EARLY AND CONTINUING CONTRIBUTIONS

Granite School District
Salt Lake County, Utah

The first district we worked with was Granite, the largest district in our state. All the early accomplishments were concerned with creative and productive thinking kinds of activities with students. A major stride forward was the experiment in four classrooms by William R. Hutchinson in his dissertation on campus entitled "Creative and Productive Thinking in the Classroom." As the principal, he asked the four teachers in social studies to teach a new way to a second class of students after they had taught the same subject matter in their regular way to a first comparable class of students. The central idea in his dissertation was to compare a learning classroom with a thinking classroom. This means that the second group of students were treated as thinkers, not merely learners. The resulting evidence shows that the teachers generally did teach differently after their principal told them and showed them how to do so.

Many of the findings and ideas that emerged in Hutchinson's dissertation have been repeated in later studies, in the experiences of other new programs, and in the experiences of implementors and adopters. His study also helped to spark further activities, so that several others in Granite District became qualified to join one or more of our task force teams. These traveling teams handled relevant requests from district within and outside of Utah.

Soon after, Alan C. Clark, also working in a junior high in Granite District, produced a somewhat parallel dissertation in the field of mathematics, with similar results. His 1967 study was entitled "A Creative Versus a Traditional Approach to Teaching Story Problems." Alan then became a faculty member at Ricks College in Rexburg (the flooded area) in Idaho.

Elwin Nielsen and I talked at lunch one day about taking some of our communication abilities research and creativity research and putting them into a Title I project. Elwin said something about how this might start revolutionizing things -- that was before anything really got started in Granite, but after Hutchinson had completed his dissertation.

Granite next finished a Title I project in which Larry James converted several of our communication and creativity tests into classroom activities. This yielded our green manual entitled "Opportunities for Creativity and Communications." These classroom activities were used very effectively. All the results came out in the positive direction against comparison classrooms.

In that project Elwin and Bill conducted live classroom demonstrations seen by teachers in the next room on video tape. Loran Reynolds was a teacher observing this demonstration. Elwin admitted openly that he was a bit of a novice and asked the students to help him. He worked with the students in language arts. During this first hour, the video was nearly always focused on Elwin as the teacher. Bill Hutchinson replaced him the second hour. Thereafter the video focus was largely on the students instead of the teacher, because the students were working so well by then that the action was mostly in the students where it should be -- not in the teacher.

Still later, Ralf Riches, Darrel Allington, Loran Reynolds, and I ran a second workshop in the Blaine School building (which has recently been wiped off the Earth and replaced by a McDonald Hamburger Drive-in). Again, we were scrambling and trying various things that might work in training teachers. Ralf Riches and I especially had some of our most exciting experiences occur then and elsewhere when we had to scramble to make things work. Some of our best strides of discovering how to conduct such workshops effectively have occurred during such scrambling sessions.

During that second workshop Loran Reynolds first demonstrated with live students, while having teacher observers in the same room. The students were recruited off the streets during the summer. Two of these students are described in the first page of "Be Talent Developers as Well as Knowledge Dispensers" in my 1968 NEA Journal article.

At that time we also learned how to have a succession of teachers-in-training take turns with the students, with each teacher in turn running a new and different classroom activity. Once this got started, the students kept functioning very effectively, so much so that they became almost unaware of the change in teachers each time. However, this did have a big effect on the teachers in making the training on new teaching approaches relevant and more readily transferable into their own classroom of students.

At about this time, I started pushing for multiple talents, in addition to academic and creative talents. A major step in illustrating and selling the Multiple Talent Approach occurred when I sketched a parallel set of upright vectors on the chalkboard to show the different pattern of scores of a few students across a series of talents. Fortunately, a person in that class didn't give it back to me the way that I gave it to him. That person was Darrel Allington, who (erroneously as I tell him) sketched faces stacked up on a series of totem poles, instead. To his original sketch I added a minor touch of smiles, flat faces, and frowns. Then Vern Bullough illustrated this concept in a final formal drawing with large smiles and frowns.

Most of our early task force teams to other districts and states included persons primarily from Granite District. Darrel will tell us more about these early beginnings, and some places where we traveled, as well as describing the work he started and has sustained largely on his own practically from the beginning of the work in Granite.

In-Service Teacher Training in Several Fields
Darrel Allington
Instructional Media Center

S. In Granite School District my job is in-service. It is interesting and challenging because it changes every day and offers me tremendous personal latitude. When I interviewed for the job, the assistant superintendent of instruction described the tasks I would perform. I was interested in the position, but I reluctantly told him, "I'm not your man. My strength is in-service, not graphics, machines, and films." It was quite a surprise when, a few days later, he called me to let me know I had been the one whom he chose.

When I started on the job I was told that it was my show -- I could run it the way I wanted. When I explained that I wanted to help teachers improve their information delivery systems in the classroom, my only instruction was, "Just make yourself available to them." And that's exactly what I did.

You would be surprised how within a few weeks I was inundated with requests for help. Since then, my life has not been my own. All of my evenings are tied up; and, when I get back to my office this afternoon, I'll have about 40 teachers waiting for help in producing photographic presentations for their classrooms. This is indicative of the kind of response that teachers manifest when help is made available to them.

Our district is just a little less than 3,000 teachers -- with the kind of vitality that can evolve in an atmosphere of rapid growth and adjustment. Our enrollment has peaked now, but much of the vitality remains. "My teachers" continue to come in for help and work on their professional growth.

Initially the teachers would come and ask how to employ media to present their concepts. While they were teaching the concept to me I could function both as a new learner and as an instructional technologist. (These were concepts, of course, that were difficult for students to grasp as they were being presented.) Then we went to work on making the presentations more efficient by visualizing the concepts with some aspect of media.

With so many people seeming to need my help, I really felt on top of the world. But when my ego inflates that way, I have learned that is time for me to start getting nervous.

You see, when I was in advertising, I thought we knew everything. We researched our people; we knew what made them tick; we knew their vulnerability. When we plugged a new product, all of a sudden they were greatly concerned about whether they smelled nice or not. Those we reached rushed down to the store and bought our product. When we would remind them that they hadn't bought any turkeys for a long time -- up would go the turkey sales. That's the reason we knew that we were doing so well.

As time went by I decided that I'd rather do something that could offer me more personal (if not monetary) satisfaction; so I switched to education. With my commercial art and advertising background I went into education with a great deal of arrogance, because I knew how to manage my "clients." I started manipulating students with this kind of smug self-satisfaction. Yet I secretly suspected that something in my arsenal of tricks was still missing.

One day I realized that I had very little background in instructional media. Like most artists, I had only contempt for instructional media -- which name alone evoked images of flannel boards and lantern slides. I was in for quite a surprise when I came here on campus and found out that instructional media offered a great deal of answers that I didn't have, such as how to visualize information, how to preserve it, and how to help kids get their hands on information more efficiently and effectively than they did from my illustrated lectures. I finally realized that in my private three-ring circus at school I was the one getting most of the value from the lessons. When I started the kids producing their own media, they began to teach me. Up went the grades; up went the scores. I received a lot of publicity (and money) and soon found myself running around the country showing all the "neat things" I did with kids. Then I started feeling cocky again. But something still seemed to be missing. There were some youngsters (with all kinds of potential) that I still couldn't reach. In the meanwhile I had become a member of the University of Utah staff and later moved into my present position -- still with this puzzling dilemma gnawing at me. "Why hadn't I reached some of those kids?"

In 1966 Cal invited me to team up with him in a workshop in Whitefish, Montana. I decided that I had better find out what this fellow Cal Taylor had been doing, if I was going to work with him. We had met, but I had never read any of his works. (Incidentally, if you want to turn your life right around, get hold of everything he has mimeographed and published. You'll find that he is often saying essentially the same thing to a different audience; but those old manuscripts of his are fantastic.) When I started reading what Cal was saying about talent development, I discovered what had been missing. I had been assuming that all students always had the same mind set as I had. My mode of learning was to mess around with information -- diverging, then classifying my results. This, I assumed, is how my students' minds operated, too.

All through school I had a tough time because I was not the kind of listener and reciter the system encouraged. As a matter of fact, I was considered a dummy all the way through school -- especially by myself -- because I couldn't retain what was expected during drill and recitation time. However, I could learn, and at times did acceptable work when the class requirements were different. The teachers would complain to my parents that I only recalled the things I wanted to learn but didn't remember the things they knew to be important. The sad truth was that I was really trying to learn the things they told me, but their pedagogy didn't work with me. I finally concluded that the teachers had all been wrong; I was saying the system of learning which I had determined to work best for me was the only right system. It would be many years before I learned that there are many approaches to learning. Unfortunately, ignorance of this fact is a pitfall to many educators. Each of those teachers was good for the kids who had a learning style that corresponded to his teaching style. The rest of the kids just had to wait for another teacher (some day) with a different style before they could have that kind of success.

Prior to our trip to Whitefish, I was sent as a substitute from the Granite Media Center to a Title I meeting in which Cal was asked to address the group. The idea that impressed me was his description of a "totem pole effect" -- the redistribution of leaders when different tasks were called for in a classroom. In my mind I visualized what is the now famous "talent totem pole," and as I did I pictured myself at the bottom in memory talents (in the "cognitive memory" skills, as some people call them). I could see also that if talent areas like forecasting or imaginative expression were used to assess me that I would be in a much happier position on the other totem poles. Because I could see this so clearly in my own experience, I could see much more clearly what Cal meant about how a switch to new intellectual approaches caused new "star students" to emerge. I didn't show Cal my "Taylor Talent Totem Pole" until much later -- when my Granite teachers and I were visiting Jordan District. By that time I had read everything of his I could get hold of, and hoped that I was on his wave length. As a matter of fact, by then I had internalized his ideas to the point where I often could not tell which things I had stolen and which things were my own.

The most important thing I have learned is that the greater the range of teaching styles we can develop, the greater is our capacity to reach students. During my B.C. (before Cal) teaching years my style was to have students attempt to synthesize new information. For a lot of kids who had been bummers, who had spent their previous years at the bottom of the totem pole, it was very successful. It was really rewarding to watch them emerging as new stars in the classroom. They became excited at their new-found ability, and their parents would come in to tell me that I was a wonderful teacher. But there were other parents who would come in to complain, "My child has been an A student all through school.

Why isn't he doing well in your class?" I was puzzled about that myself. I knew I was giving them my best shots; and based on my own experience in school, I felt I had developed the best possible approach. What I hadn't learned, of course, was that my success was with students whose learning strategies were close to my own, and that there were many students whose greatest strengths were being ignored entirely.

After a demanding workshop in Des Moines, one evening, as Cal and I were sitting on a grassy hill overlooking the city, I blurted out, "This is too fantastic! You take this help to Whitefish, Des Moines, Buffalo, Arizona, California, and everywhere else. How about Granite District?"

He asked, "What do you have in mind?"

"I want you to do a series of workshops in creativity with my teachers in Granite." He said he didn't have time.

"If you don't do it, I threatened, I'm going to! And I'll do it as soon as I get back!" He didn't, and I did. Now I realize that it was just what he wanted me to do all along.

When we returned to Salt Lake, I called some teachers I had helped in the past and told them, "I don't know for sure what I'm doing yet, but I think I've got something pretty special to share. I'm tied up Monday through Thursday with other teachers already, but would you mind giving up your Friday nights for a year to work with me?" Of the 22 I called, 20 joined me and stayed all year. All 20 became leaders in some capacity in Granite District within the next two years, and some went on to leave me in their dust.

We soon realized how many different styles of teaching we had. Some were good "cognitive-memory" people; that is to say, they were very capable at conveying information to students so that they could remember the information and pass tests. Others' strengths lay more in helping students organize unresolved relationships for efficient solutions. Some were able to help students develop critical analysis skills. Others were just fantastic at getting kids to generate new ideas and express themselves fluidly. These differences were not as we supposed initially personality differences, but differences in the intellectual strengths we brought out in students.

At about that point Cal visited us and made a passing comment that had more impact upon us than almost anything else he has ever said: "You've got to be able to risk being a novice. Are you willing to take such a risk?"

Like most of what Cal says, if you don't study the information sentence by sentence, you won't realize what he has told you, so casually he drops these little pearls throughout his conversations.

Every sentence contains a warehouse full of thoughts, which is very frustrating for people who encounter him the first time. People will often tell me, "I can't follow what he is saying." I advise them to tape record everything he says, listen to just one sentence, then turn off the recorder and let that idea sink in, challenging its thesis and contemplating its myriad meanings. Believe me, it's worth the effort!

Back to Cal's comment about being a novice. The teachers and I met together and concluded that if we started using each others' styles we would look pretty bad initially. We felt that it was essential, though, to utilize each others' successful approaches. Some of the kids began to profit right away even when we performed our imitation of each other poorly. The kids whose talent strength was served by that approach, even when we were awkward, were a great deal better off than they would have been if we had taught only in the way we individually learned best. I should mention that we didn't remain novices forever. We improved in the new styles just as we had in the style we finally adopted as new teachers years before.

By the next spring, we were far enough along that Cal arranged for Jordan District (our sister district to the south) to invite us to a creativity workshop. This gang of novices -- and we were novices -- tried to share what was happening to us and our kids with these exciting, dedicated teachers and administrators in Jordan. After that meeting the Jordan teachers and some of the administrators, like Gibb Stevenson, took off like a rocket. They are still doing some very worthwhile things, whereas, by contrast, I no longer have sufficient administrative support to expand my previous efforts "officially." Admittedly hundreds of teachers have come to me on their own and asked for help in an unofficial capacity; but when you look into Jordan District, you'll find out what spectacular results can take place when a concerted administrative effort is made. (You will be hearing today from Darrell Johnson, who is the only administrator with any official authority to go ahead in multiple talent development in our district at the present time.)

A few years (and administrations) ago, though, one of my bosses said, "You have some interesting ideas. Could you plug them into the curriculum?" By fortunate coincidence some teachers, at the same time, came to me and asked for help in language arts. This gave me a perfect forum to answer his question.

These teachers wanted to do something with parts of speech. I assured them that was the most exciting thing they could do, and showed them a few ways they could treat parts of speech with a wide range of intellectual strategies. They developed many excellent materials for their students and finally put together a book which has proved to be one of the most sought after language arts documents in these parts. After four months of utilizing these ideas their

students were tested for fluency and flexibility and compared with control groups in several surrounding schools. The tests indicated that after only four months of manipulating parts of speech in this way their students were significantly higher on creativity measures than the students in the other schools. It was so remarkable that we didn't trust our results. So I replicated the study four more times -- all with the same results.

Whether I worked with teachers of special education children, "regular" first through sixth grade students, or Title I students at the bottom of the district (of more than fifty elementary schools), when they were compared with our control group of eleven to thirteen year old students, the experimental students performed significantly better -- usually starting from a much lower initial position. One of our most graphic situations occurred on a school in which one teacher refused to participate. His students began the year with an amazing advantage in fluency and flexibility scores than did the other classes (having been specially grouped for their ability before the program began); but the other students, even the ones three grades younger, had far surpassed his class by the end of the school year.

Then I got a new boss, who called me into his office to give me a challenge. "You proved what could be done in language arts. We want to see what can be done in mathematics." It was a little frightening to me because I'd had very little background in mathematics. He assured me that he wasn't too concerned, because the problem seemed to be not so much that teachers had no mathematics background, but that there was some pedagogical problem to be reckoned with. He concluded by announcing that I was the new K-12 mathematics supervisor.

Our superintendent then was T. H. Bell, later U. S. Commissioner of Education. He picked me up in his car soon after and said, "I understand you've just been made math supervisor. I replied defensively, "Isn't that the darndest thing you ever heard?"

He didn't see the humor. "I just want to tell you this one thing," he continued. "Our scores are disturbingly low in computation and story problems, and I want to see them go up."

"That's asking a lot!" I was really threatened. "You've had a Ph.D. with a math specialty in that spot for nine years. What do you expect me to do that he hasn't done?"

He was, as usual, very straightforward: "By spring I want to see those scores go up."

I was then sent into five of the Title I schools to work with students who were at least two years below grade level -- some three and four grade levels below. I was to concentrate on third through sixth grade students. We zeroed in on the concepts that

the students hadn't mastered and attempted to have them deal with those concepts with a wide range of intellectual approaches. We particularly stressed two major intellectual considerations: first, we tried to make sure that the students could "translate" from words to symbols or to things (the so-called semantic, symbolic, and figural content) and vice-versa, using math terminology and operations as the subject of this manipulation. Second, we attempted to make sure that what they did with those words, symbols and things was approached cognitively, convergently, divergently, and evaluatively.

The students brainstormed story problems, manipulated objects, proofread mathematics manuscripts, and experienced a wide diversity of intellectual challenges for nearly four months. Then we assessed their progress.

The pre- and post-tests were six months apart. That meant that if they had been average students we should have expected their scores to show a .6 gain in a normal program. We were initially worried when we learned that the post test search of the rest of the school (the "bright" kids) only averaged a .4 gain. However, the growth of our target students (who, remember, were at least two years below grade level and whose gains in the past had averaged about .2), were 1.8 in computation -- nine times their predicted gains and more than four times the gains of their fellow students. Moreover, these "non-readers" made gains of 1.4 in story problems!

My new boss has now dropped me from the math assignment and has assigned me to art supervision. I'm extremely pleased to report that I'm having the same kinds of challenging and rewarding experiences in my new discipline now.

Granite - Teaching for Multiple Talents
Darrell Johnson and Ellen Johnson Williams

Darrell Johnson was assigned as the principal in a new architecturally open-plan, round school named Fortuna. He was given the opportunity to select his teachers and that is the area in which he did his dissertation on the selection of non-dogmatic, flexible teachers. Ellen is a sample. Earlier he was an excellent printer for the district. He's an artist who has painted and printed, for our summer workshops, the exciting pictures hanging on my office wall.

Almost invariably schools will let an artist have his studio in one room in the school and use studio approaches in the art classes therein, but never let that "studio climate" spread more widely in the building. Darrell, however, got the whole building. So in one sense as the principal, he is like an artist-in-residence and his entire building is more like a studio than is typically found. More recently he moved to be the principal of the Holladay

Elementary School. Last year the three of us ran several multiple talent workshops for teachers (and a few parents) in Granite District, out of which the teachers produced classroom activities in a Granite manual entitled "Gifted and Talented."

Darrell and Ellen: There appears to be an interesting trend in observing programs that have come and gone in Granite School District and in other places. We have called these the phenomenon of the marvelous program. After awhile we realized that it wasn't functioning beautifully -- it was functioning erratically. Many principals have been concerned about these new things that come and go because they do function erratically and many of them don't last long.

Ellen and I were involved in starting a new school at Fortuna and getting some things going there. Next we had an opportunity to move to an older school with a staff that was pretty well established. We (as well as other principals) were concerned with how to get something going that's really lasting. Something that is not going to come in with one wave and go out with the next. This is what we've been trying to do the last few years -- establish something that will come and not go.

One of the things principals say is, "Well what kind of reading program do you have?" We say, "We've got such and such program and we're all using it." But I am here to tell you that we are not all using it because regardless of what we call the program, it is being used if I (the principal) go into those classrooms and check with all the teachers. But when I'm invisible, I find what we call surface compliance, as long as they see the principal or the authority figure they comply. That game varies, of course, as the relationship of principal with teachers. We have tried to start an honest program in the talent area and are attempting to change the ball game.

C. The phenomena you mention are like the ones Elwin Nielsen later presents in his report with the column where they claimed what they were doing was 15% divergent, 20% convergent, and 15% evaluative versus the real column where they were observed to be doing these three only 3%, 4%, and 2% of the time.

Ellen: Incidentally I was one of those teachers that Elwin came in and taught. I think there was 90% of the time spent on cognitive memory and about 10% on routine. Because I was not one of the outstanding teachers, I was in the second group of teachers taught and this really had an impact on my teaching.

S. We've been trying to find out some of the factors that allow us to arrive at this thing with a realistic viewpoint and not get involved in this game playing that we go through. So we attempted to set a climate in which we could implement some of these things, and hoped it would be on an honest basis. We don't come in claiming

we're all doing program "X," even though we knew darn well we weren't doing program "X."

We listed about five things that we found to be helpful in this. I certainly wouldn't say that we've been highly successful but we at least feel good about what we are doing. First, we are trying to reduce the threat of authority. I think in most schools there is a threat quotient, which is determined by two things: district policy -- at least the way it's seen by the teachers, and the other is how the principal is perceived by the teachers. Any administrative position produces a fear quotient, whether or not we're aware of it. Principals feel they get along beautifully with their staff." And then others hear through the grapevine that their staff is ready to lynch them. We tend to delude ourselves to some extent. Consequently they try to pay attention to these factors when coming into a building.

Second, is the willingness to let other people fail and our willingness as administrators to fail. It's forbidden in a bureaucracy to fail.

Third, is to put inputs on new trends on an exposure level instead of a make-them-do-it attitude.

Another is to deal with what's going wrong rather than placing blame. One of the favorite games in a bureaucracy -- is if something goes wrong, is to find the memos and letters that exclude ourselves from blame so we can either kick it up or down.

The last item we feel was to say "yes," to teachers as often as possible.

C. What do you do to map out how to reduce threats in the teachers? I think that would be interesting.

S. I've tried to spend some time each day with the teachers on an informal basis where I never bring up a subject of anything that has to do with the school. I spend as much time as I can on a personal basis. This is one thing that seems to be somewhat helpful. When the first opportunity arises, when somebody makes a mistake I let them know that this is not a cardinal sin. I think you do the same thing as teachers in the classroom.

Ellen: In setting a creative climate in the classroom, I think the same procedures can be followed as has been suggested for administrators with their children. Our children are programmed to want to please us and to make responses that will be accepted. One of the first things we have to do as a classroom teacher is reduce the threat. We have to convince them to trust us with their thinking and that we will accept the things they produce.

When we ask them a question, we don't want them to say what we think; we want them to say what they think. You have to follow

much the same procedure in being very acceptive and in being very positive. It doesn't mean that you don't discipline and it doesn't mean that you let your class go to pieces. But it does mean that in those areas of the curriculum you've opened up to multiple talents and to divergence, for example, that you need to allow them to diverge. You need to accept their responses because if you tell them "Kids, I want your ideas. I want your responses. I'll accept anything you say," then in the minute they start giving something that is different than what you think, you say, "Oh, that's not it, it doesn't fit." They are going to say, "Yeah she says she wants it, but she doesn't!" Soon they'll clam right up and will not produce.

Teachers ought to be cautioned about this, too. You've got to be willing to accept what they do. And also give them exposure to many things. You need to expose them to ways of organization; ways to reflect on what they've learned, and many ways of expressing themselves. When things go wrong, divorce the students from the act. Rather talk about how it can be solved, rather than saying, "You're a bad kid, etc." Say "yes" as often as you can.

Adopt the philosophy of saying-yes-as-often-as-you-can, without giving away things you can't: I cannot give away school rules. I've still got to enforce those. I cannot give away the behavior that I think is necessary in order to accomplish the things that we need to accomplish in school, I can give away some curriculum items and I can encourage producing in a variety of ways. Soon they start viewing you as a yes person rather than the very rigid, regimented person.

Darrell: We've had trouble dealing with the perception some teachers get about multiple talents. They visualize people down on their hands and knees, underneath the tables and things, because they feel that somehow behavioral limits go out the window. We think it is very important to set up limits and let people know where the ball game is. There are certain things we can't delegate. Law and safety are two of these. Other things are fair game. We should delegate these to teachers and/or to students.

One incident may point out this business of threat. A principal was new to a school. He came in and said, "One thing that I've noticed about this school is that it's just rotten. Your scores are low, nothing is right and I've come here to correct it." Anyone who has been around people for any length of time would understand the kind of threat and barriers that he put up with such a statement. Another principal may come in and say, "We're all going to start a new reading program because we've done so poorly with the other one." Another may say, "Now what we're bringing you today is multiple talents, folks, and this immediately precludes all that you've been doing for 20 years." The minute a principal makes one of these approaches even subtly, he devalues what you have been doing. He has set up some psychological barriers that are hard

to break down. He is going to find later on, that all he has attained is surface compliance.

What we try to recommend is to go into a new school with a low profile. Avoid saying "I'm bringing three super teachers with me, so just watch them and you're going to learn something." We suggest avoiding any pitch such as "we're bringing you salvation folks." This sets up barriers against a new program.

As we moved to another elementary school, we started with discussions in the faculty room, just shooting the Bull, bringing up all kinds of bizarre topics at lunch and at various times, in an effort to win an inter-human relationship. We discuss a lot of different topics. We waited a year or so before even discussing any of this. During our discussions we started talking about how to deal with kids and some things seem to work for us.

Three teachers transferred with me. One was not doing any multiple talent teaching, but Ellen and the other teacher were. One teacher started teaming with the group downstairs. As the others saw her operate with the kids, they became very curious. At lunch time they would ask, "What about this?" They would also comment to other teachers. We didn't say anything and pretty soon they were really getting quite excited and started to try a couple of these things. Soon some of the other teachers said, "Well why can't we get ahold of some of this?" We responded, "Well if you're eager and excited and want to do it, that's fine with us. We'll be willing to spend a little time."

We started some informal meetings in the morning before school in lieu of faculty meetings (which we rarely held). We found that kind of approach to be fairly effective. What we wanted to do was to sort out those who had some basic interest and could see some value in it from those who did not.

Those early morning meetings came about very informally. No announcement was made and I think that we had five or six teachers the first early morning meeting. We sat around the table and tried talent activities. Then as other teachers drifted into the faculty room, other teachers coming in would say, "What's this? I didn't know there was a meeting?" and we'd say, "Well, there wasn't." We just gradually attracted more people -- it was very interesting to watch things happen. Either through a desire to improve or a real interest in many talents we gradually attracted more people. Those were the first beginnings in our second school.

There was a group of five or six principals who wanted to have someone tell them about multiple talents. Ellen was invited to come in and give a presentation. She did and they were really impressed with it. They asked us to give them more of a run down of what was going on. They requested through the district for instruction.

The district came up with four thousand dollars of Title IV funds from the state. We started teaching some classes at the schools that asked us to come out. We did that for only the teachers who were interested or who wanted college credit. We offered in-service credit also.

Although we had been around multiple talent teaching we didn't understand the difficulty people have in transferring this from cognition (or learning about it) to doing it. We found they would take an Igniting Creative Potential book and try a few "ditties" in the classroom. They really did not have a grasp of how to do that on a practical level. Teachers are the most practical people on the earth because they want something they can use -- not philosophy. They want something they can understand and work with, without it being an overpowering task. We noticed they could give us all the right answers cognitively. They could tell us what convergence meant and what divergence meant but they couldn't translate it into curriculum. They relied heavily on the book. We attempted to get them to write and try activities in the classroom then come back and evaluate the progress. We decided to take some money (we were not spending the state money very fast), to get those teachers together who were interested enough to take a second class. We figured we would drop a lot of people who were just taking it for credit. Then we offered a writing class wherein we set up a very simple format on how to write their own curriculum without a lot of pain. We used a very crude sequence. But it did ensure that they would have to interrelate this in their subject matter curriculum. We found out that they were starting to transfer their cognitive knowledge into their actual teaching.

Ellen: We would introduce them to Guilford's model as a basis for the Taylor Totem Poles and for the multiple talents because you all know how they are related. We would find that people could parrot back convergence and divergence, all the thinking processes. We thought "boy, we'd really taught them. And that they'd be able to take it back to their classes and use it." We found out differently.

C. Is it because most of the teachers are coming from the old system of teaching?

C. Or maybe we just haven't brought them far enough into it.

C. I have been consulting with an Ohio State (NIE supported) project on transferable attributes. Transfer of training is a thing that you better not expect to happen because of the great complexity of people. What they have been trained to learn or to do will generally not transfer so that they can automatically do something else that is quite a different process for them. It's a rare day when transfer of training really occurs. When you get people taking courses for these re-certification points, success in getting credit in these courses does not change the way that they teach.

Ellen: We found, as we would give them activity books, they would use them and they like the philosophy. They would not go beyond the books, however. We decided as one of our objectives for our classrooms to give them a cognitive knowledge and then to give them an opportunity to write their own activities for curriculum. We did that in the beginning class.

In the second class, it was again oriented toward writing. We would meet together one day a week and take one facet, something like divergent thinking activities. We would spend an hour writing divergent thinking activities. They would try them in their classroom, come back and share what they had done plus evaluate in order to discover their problems and the effectiveness of their activities. At that point we started to get some transfer into the classroom. The books were very worthwhile, but we needed to get them one step beyond -- that of writing their own materials.

Darrell: In the educational system that has been used in the past we put the emphasis on memorization and cognition and we have screened out (of the system) some highly talented people. People who have the talent in cognitive and memory areas are the ones who generally have survived the educational system and become teachers. We are perpetuating the established system. There might be some people who dropped out of school and went on to business or something else who would be more readily able to make the transition from the academics to functional curriculum.

C. Those who have been most successful in the old system are the ones who will tend to perpetuate and reproduce the system and who will be least likely to reform it. That's from George Washington. Abbey stated it even better when she said that reform practically never comes from the top because no one holding four aces ever asks for a redeal.

S. A preferred evaluation takes place a little later down the pike, if the teacher is or is not using this approach. My experience has been that you don't have total complete integration for everybody. For those who persist, it's still a matter of how sophisticated and capable they are in influencing the life of kids.

We just had a big evaluation of reading in Utah where they went into some really elaborate schemes to find out the reading competency, state-wide. There were only 2% who passed the functional level of the test and only 2% of the teachers. As Ellen and I looked at the test, students did very well in the basics. They had fallen down in areas ascribed to reading which in fact were higher levels of thinking.

The kids did the phonetic word attacks, word meanings, those types of things beautifully; in fact, it was overkill on those areas. But when they got into the higher thinking levels, such as divergence, evaluation and inference the kids fell down. I would think the majority of adults would fall down in the same areas.

C. Let me share an experience that happened three or four years ago. I found Darrell was playing ping-pong with a student, who had been sent to him for being too restless in class. So Darrell invited him to the ping-pong room. Darrell, when did the game end?

S. When he got through beating me, saying if you can't improve your skills better than this, I'm not going to play you any more.

C. But seriously, you said the game was over when he felt he had settled down and could manage himself well enough to return to his class.

Granite's New Program for Gifted/Talented
Colleen Taft

We have with us the instigator, the initial leader of the Utah Parent Association for the Gifted and Talented, Colleen Taft. She is also the representative for the Gifted and Talented on the Utah State Title IV Advisory Council as well as being one of the initial five members, along with Gilbert Stevenson and myself on the Utah State's Gifted/Talented LTI team. Colleen and her family moved into the Fortuna Elementary School area just after Darrell Johnson transferred as principal from the Fortuna Elementary School to the Holladay Elementary School.

Colleen: My usual comment is, "Last year I was a parent, and this year, I am a professional." Last year, January 1976, the Utah Parent Association for the Gifted and Talented was organized and incorporated, and the major objective which was undertaken by the group was to persuade the Utah State Legislation of 1976 to appropriate funds for state-wide gifted and talented programs. It had been fifteen years since the last attempt to persuade the legislators of the need of the special programs, but the parents organized themselves, and because of their effective lobbying, the Education Subcommittee allocated \$137,000, to be distributed on a competitive basis, through proposals, for gifted and talented programs for the school year of 1976-77. A total of 14 proposals were submitted to the Utah State Advisory Council for the Gifted and Talented to be awarded on the basis of the quality of the proposal, and on the need of the district. Eight of the fourteen were awarded and funded, thus, fifteen of the forty Utah State school districts have begun programs for their gifted and talented students this year.

Granite School District, for whom I work, received \$48,000 to implement the programs within their elementary school system. You are probably not aware that the Granite School District is responsible for educating 60,000 students (that is 1/5 of the State's school population), and you can tell from the presentation of Darrell and Ellen, our district is very large which allows us to work with a diversity of gifted and talented types and ranges. After the district received their funding, three project implementors were hired, one of which is myself. In conversing with some of you and visiting with all of you, I find our vernacular and semantics may mean

different things. In our district, the project implementors work on the level of the district office and act as resource personnel to the elementary school in the design and implementation of their gifted and talented programs. We have also chosen to call our project, "Gifted and Talented" rather than "multiple-talent" inasmuch as we place more stress on the academic range of gifted and talented. The two other project-implementors will meet with you tomorrow when you visit the Granite School District and one is Janey Foster, who has an extensive background in special education of the learning disabled and of the gifted. She received her training in the gifted area in the State of Illinois and worked on a special grant under the direction of Dr. Frank Williams, who is nationally known for his development of the Williams' Strategies, a curriculum structure which is geared to reach higher levels of cognitive thinking in the gifted child. Janey is also in charge of the in-service classes for our project, and teaches the Williams' Strategies, as one part of the class, to the school faculties within our district. Laurie Maak, psychologist-implementor, joined our staff this past December, and is a trained psychologist for the gifted and talented, and this is a rarity, and a privilege to have such a skilled staff member within our project. Most of the projects nationally do not have a psychologist for the gifted and talented, and Laurie took her graduate training in Athens, Georgia under the direction of Dr. Paul Torrance. Laurie performs a valuable function, besides implementing programs, as a counselor for the troubled students and/or their parents.

Our project will be explained in detail tomorrow when you visit our district, and as I have explained earlier, we are large and have 52 elementary schools. We have determined our objectives for the school year 1976-77 to be: 1) awareness; 2) development of identification techniques and student identification; and 3) teacher in-service. Next year we will begin programming and will continue with student identification and teacher in-service. Our basic philosophy is staff development whereby the regular classroom teacher gains the skills needed to service the gifted and talented student.

PROJECT IMPACT¹

Ralph Norris, Elwin Nielsen, Bill Clark, and Helen Coe
Polk County School District, Iowa

Fertile soil was found in Polk County, Iowa for an important Project Impact, rated once by the U. S. Office of Education as one of their best Title III projects in the nation. They have been going for practically a decade and every summer they have had 100 to 125 teachers go through some intensive training for several weeks. In some ways they have probably put more teachers through this kind of in-service training than any other single place known to us. Their initial Polk County School District which contained many smaller districts within the county (including Des Moines City School District) has recently expanded to an 11 county area which is now called the Heartland of Iowa -- a most important educational area in Iowa.

Project Impact was initiated by Superintendent Ralph Norris, who had begun his educational career as a science teacher. He heard Elizabeth Drews and me give speeches on creativity in the Americana Hotel in New York City at the second annual National Education Association - National Magazine Editors meeting.² Then Dr. Norris went home and quietly accomplished careful groundwork for about three years so that when the project started, it would be sure to succeed. Joe Shea, then from Iowa State University, helped to spark the project into existence after hearing me speak on creativity later at an annual Iowa Education Association meeting.

Norris invited a team of 10 of us from Utah to help launch the project. These were Darrel Allington, Richard Hawkins, William Hutchinson, John Larsen, Elwin Nielsen, Joe Reidhead, Loran Reynolds, Ralf Riches, Lynn Stoddard, and myself. Then he kept using several of us over the years and he has treated me as well as (if not better than) any educational administrator that I have ever met. Actually Bill Clark wrote the project proposal and then completed his dissertation during the first project year, so we left one of our crew, Elwin Nielsen, to direct the project's first year in Iowa. Afterwards, Elwin returned to Granite District (and later moved to Utah

¹IMPACT (Innovation and Motivation in Polk County for the Advancement of Creative Teaching)

²William Hutchinson's district financed him to accompany me to that meeting where he was able to distribute copies of his dissertation to everyone in attendance. (Later Dr. J. P. Guilford also received a copy and wrote Hutchinson a very complimentary letter about his dissertation.)

State University in Logan). Bill Clark then became the project director with Helen Coe, formerly on the Iowa State University faculty, as his assistant. Helen later replaced Bill as the project director when he was promoted to a higher position, still overseeing Project Impact.

Ralph Norris continually reminds everyone that when Norma Trowbridge did statistical research on Project Impact, the finding in their in-service workshops was that only when teachers practiced new ways of teaching with students was there any transfer of teaching in that new way back to their own classrooms.

The First Year of Project Impact Elwin Nielsen

S. I worked in Polk County School District in Iowa on a project whose purpose was to train teachers to provide an education that would foster productive and creative thinking in their students. Ralph Norris was the Superintendent at that time and he had obtained a grant as a result of his being a very astute and aggressive educator as well as a politically able superintendent.

Since it is a natural thing for teachers to go on doing the things that they have seen their teachers do and the things that they themselves have done, I shall try to describe how we managed to get the Iowa teachers involved in making some real changes in their classrooms. The most basic and powerful things we did were to involve them in groups where we explored with them their attitudes, their feelings about themselves, and the threats of introducing change into their classroom. Then having gotten them used to the idea of change and of being aware of the potential threats involved, we wanted to give them some techniques that would provide them with immediate success as they tried something new.

One particular introductory project might serve as an example. We concentrated on providing extensive training to the teachers in eliciting productive thinking in the classroom. We began by sending people into 120 classrooms to monitor the amount of time that teachers spent promoting each of Guilford's five thinking operations in their students. Table 1 shows the initial results in the first column. Notice the high proportions of Memory and Cognition. Notice also the high proportion of time spent in a new category, Routine, which we had to add. Routine included all the necessary classroom maintenance activities and had nothing to do with thinking and learning of students.

After we had collected a good sampling of the type of intellectual operations that were conducted in the classrooms, we got the teachers together in a workshop atmosphere and taught them the meaning of the five thinking operations in Guilford's model of the Structure of Intellect (Guilford, 1977). When we were certain that they understood the terms and concepts, we asked them to estimate

Table 1

Mean Percent of Time 120 Teachers Spent With Each of
Guilford's Thinking Operations

	Observed Baseline	Teacher Estimates	Teacher Ideal	Post Training Observed Time
Cognition	26	30	21	20
Memory	33	28	18	21
Divergent Production	3	12	23	18
Convergent Production	4	14	20	16
Evaluation	5	16	18	16
Routine	30	--	--	9

the proportion of time they spent in the classroom eliciting each of the five thinking operations from their students. The second column in Table 1 shows the average percents. Following that we asked them to list the amount of time they thought teachers ideally should spend working with and eliciting each of the five thinking operations.

Next we taught them brainstorming using Alex Osborne's model. As you are probably aware, when one follows the brainstorming procedures that Osborne outlines it is necessary to use all five of the Guilford operations. After we trained them in brainstorming and then worked with them on applying brainstorming procedures to their individual classrooms, we left them alone for six weeks to operate on their own in their classrooms.

After the six week period elapsed we returned to the classrooms and observed again. The results we got are also shown in Table 1. You can see by inspecting the table that the percentages of time spent had moved some distance toward the ideal percentages that they had previously indicated. I have two comments about that change. The first is that it does demonstrate clearly that teachers can change their behavior rather dramatically under the right circumstances. However, it also appears to me from this material that as in many other cases, teachers need to be helped to become aware of what their behavior is so that they have a framework for change as an aid to change. In this case, initially their real behavior was quite different from their estimated behavior. Probably the biggest surprise for me was that their Routine behavior category had dropped so remarkably going from 30% down to 09%. During all of the introductory material they were never informed what we were measuring, how high the Routine category was, or even that we were measuring such a category. Therefore there is little likelihood that they could have been making any particular effort to lower that Routine behavior. Of course, after the initial measurements were taken and we were teaching them the Guilford model, they could have assumed that our measurements had to do with the model (though it had no Routine category in it).

To satisfy my own curiosity I asked each teacher to speculate about why that large drop in the Routine category may have taken place. Invariably, after thinking about it, they commented that their students were much more interested in the type of school work now and therefore it was much easier to keep them motivated and on task and that their students were much more independent and could settle down to work on their own more readily without having to be disciplined or coerced into it. All things considered, it appeared that the teachers could really apply a new productive thinking training program if they were shown how to do it in a careful way and it appeared that it made the classroom much more interesting and satisfying for both students and teachers.

This was just one of many programs that we instituted, in each case with rather similar results. Perhaps the important issue is that in each case the material was presented to the teachers in a carefully structured way and in enough detail that they could really understand how to apply it in their classrooms.

IMPACT's Staff Development Program in Creativity
Bill Clark

S. Project IMPACT, initially funded by Title III funds, and sponsored by the Polk County Board of Education in Des Moines, Iowa, is designed to foster creativity of children through teacher inservice education. While the program has differed slightly from one year to the next, the general procedure for the year-long training program has consisted of: 1) four or more one-day workshops conducted during the school year, and 2) a five-week institute held during the summer months.

Creativity as a Major Goal

Creativity, as described by McKinnon, is a term that summarizes a complex set of attitudes, emotions, and affective and intellectual skills. In an effort to organize the abundance of creativity research and literature into a meaningful in-service education program, IMPACT has concentrated on the personality, environmental, and process dimensions of creativity. It has incorporated these dimensions of creativity into two global objectives: 1) to humanize the setting in which teaching and learning take place, and 2) to help teachers give students more opportunities to use their productive thinking skills. A more detailed description of these comprehensive goals follows:

"Humanizing" is another all-encompassing term. It applies to an extremely difficult area in which to train teachers. IMPACT's work with teachers regarding humanizing focuses largely on the technique called "group-process training," which emphasizes small-group discussions. The task for these small discussion groups is twofold. First, to discuss a given topic, react to a lecture, or solve a problem; and second, the group is to observe itself in action or look at the process (ongoing dynamics) of the discussion.

To carry out this dual function, each group chooses a "facilitator" and an "observer." The role of the observer is crucial in helping teachers understand the educational implications of group work for humanizing and for the climate in which learning takes place. The observer's function is to answer for the group such questions as: Did the group apparently understand its goal? What kinds of verbal and nonverbal communication behavior took place during the discussion? Did all the members apparently share in the responsibility for leadership? Did the members exhibit some degree of trust in one another? Were feelings and emotions frankly expressed or was the discussion a stilted intellectual exercise?

The facilitator functions as discussion leader for the group, guiding it toward its goals and helping the group members express their views effectively.

In this group-process effort, IMPACT has relied heavily upon the research of Matthew Miles and his book Learning to Work in Groups, the research on social change by Kurt Lewin, and Carl Rogers' work as reported in such books as Freedom to Learn.

The rationale for placing so much emphasis on group process in the IMPACT in-service education program is that: it provides for active teacher participation, it is a good teaching and learning strategy, it encourages attitude change -- which usually comes about primarily through interacting with one's own respected colleagues, and its positive orientation enhances teacher self-concepts.

Some other materials IMPACT uses in emphasizing its overall goal of humanizing are: A. W. Halpin's Organization Climate Description Questionnaire, Krathwohl's Taxonomy of the Affective Domain, Rogge's self-assessment inventories, and Suchman's material on inquiry development training.

IMPACT's second major goal is teaching for productive thinking, or, stated another way, deliberately cultivating student creative thinking abilities. The concept of teaching for productive thinking, as developed by IMPACT, involves: increasing teachers' understanding of student cognitive behavior, increasing teachers' skills in the development of teacher-learning strategies to elicit various student thinking processes, and increasing educators' realization that many traditional classroom learning exercises are predominantly memorative and convergent in nature.

In training teachers to teach for productive thinking, IMPACT has used a variety of resources, all of which suggest the need for more creative or productive thinking experiences for students. One of the evident strengths of Project IMPACT has been that it has exposed teachers to a variety of materials emphasizing productive thinking. This exposure has enabled teachers to have a choice in determining how students' thinking might best be accomplished and a "thinking curriculum" implemented.

To ensure program accountability, IMPACT's Director of Research, Dr. Norma Trowbridge, has submitted several research reports to federal and state agencies. I might briefly describe some of these research efforts as follows:

The Humanizing Influence of the Project. Evaluation of the humanizing goal is admittedly difficult. The goal of humanizing involves positive efforts to increase an individual's self confidence, his self esteem, and his feeling that he can make a worthwhile contribution to society. The extent to which a person holds

such a constructive self concept has been shown to be positively correlated with his ability to learn.

Therefore the criterion finally chosen to measure the extent to which IMPACT's humanizing goal was accomplished was the assessment of self concept. A widely used definition of self concept also adopted for this project is that the self concept consists of the body of attitudes a person holds about himself.

The most difficult problem in attempting to measure the humanizing goal was the search for appropriate and valuable instruments for measuring self concept. After pilot work with different tests, two instruments were eventually chosen to measure self concept, one for children and one for adults. Instruments chosen were those which are currently the most widely used. These instruments have also been used extensively in research. The adult instrument chosen was the Tennessee Self Concept Scale (William Fitts, 1965). Stanley Coopersmith's (1967) Self Esteem Inventory was selected to measure attitudes comprising the self concept of a child. Both are self-report inventories.

The Tennessee Self Concept Scale was administered to teachers before and after their participation in a one-year inservice education program. Self concept measures were administered to the students of these teachers in September and again the following June. The study was replicated the next year with a new sample of teachers and children. Results of these studies are illustrated in Table 2.

The national mean for the Tennessee Self Concept Scale is 348; the mean for the children's Self Esteem Inventory is 70. The data suggest that teacher's participation in the IMPACT program is related to increases in self concept of both the teachers and students they taught, at least in terms of their own self report.

Measurement of Productive Thinking. Since the goal of the project was to decrease the amount of "reproductive thinking" (sensing, perceiving, recalling, remembering, memorizing, retrieving, identifying, etc.) used in classrooms and to increase the amount of "productive thinking" (synthesizing, inferring, generalizing, evaluating, analyzing, creating, thinking divergently, etc.) a yardstick had to be found to measure kinds of thinking.

It became evident early in the investigation that the primary evaluation of the success of the teacher education project would necessarily be in terms of classroom activity. The defining and measuring of thinking processes therefore had to be done within the context of classroom activity. Much of the early research effort was directed at this criterion problem.

Experimentation with paper and pencil tests showed this approach to be unsatisfactory for the kind of evaluation being

Table 2

Means of Self Concept Scores of Teachers and Children

		Pre measures	Post measures
1968-69	102 Teachers	351.6	369.6*
1969-70	96 Teachers	349.2	366.7*
1968-69	3591 Children	69.9	72.9*
1969-70	2843 Children (grades 2-8)	71.2	73.1*

*significant at .05 level by t test

attempted. Eventually, a criterion was adopted which was based on Guilford's conceptual definition of the classification of thinking operations coupled with a measurement instrument designed by Mary Jane Aschner and James Gallagher.

Of the five thinking operations defined by Guilford and previously mentioned, divergent thinking, and to a lesser extent evaluative thinking, are most closely associated with creativity. The creative individual obviously relies on the other thinking operations also, but these two have been found most crucial for creative thinking and problem solving.

The Aschner-Gallagher instrument was chosen to collect data. The technique used in a verbal interaction analysis specifically was designed to measure the amounts of the Guilford thinking operations actually occurring in a given classroom. A random sample of classroom time is selected and a trained observer records at 15-second intervals the type of thinking being expressed in the talking that is going on. The product of the analysis is a statistical distribution of classroom time among the Guilford thinking-process classifications.

There are some details of the operation of the Aschner-Gallagher method which should be noted. First, since it is practically impossible to distinguish between Guilford's "cognition" and "memory" categories by listening to a verbal exchange, these two are combined on the Aschner-Gallagher scale. Second, in addition to the Guilford thinking processes, the analysis measures the percentage of time in the random sample in which the students are talking (and the teacher was not). Finally, the scale has a category called "routine," in which the analyst places his tallies where non-instructional (housekeeping) needs are being tended to in the classroom and no observable thinking operations are taking place. Routine items are composed of the most simple forms of thinking operation, sometimes even termed "non-thinking."

IMPACT's adaptation of the Aschner-Gallagher technique involved the use of the audio tape recordings (both video and direct-observation methods were tried, but dropped because both intruded too forcefully upon the normal classroom activity). Each sample consisted of a full hour of taped classroom conversation, but the 15-second tallies were performed only on three 10-minute periods selected at random on each tape. A 10-minute period was extended as necessary if part of the conversation was unintelligible so that a full 10 minutes of interaction would be tallied. An average of five tapes from a given classroom collected during each year was assumed to provide a reasonably representative sample of the thinking activities typically occurring in it.

Problems with analyst training, inter-analyst reliability (i.e., ensuring that all analysts had similar judgment in tallying

operations), teacher cooperation and other practical difficulties were found to be surmountable.

It was also of interest to learn whether any changes in classrooms of the teachers which might occur during the teacher training program would have permanence. Would the effects of the program hold over time? Table 3 represents results of a longitudinal study displaying data collected on the teacher participants in the inservice education program in 1967-8, following them for three years after their participation. Differences between the pre-measures and each subsequent year are significant at the .05 level by the Chi Square test.

Table 3 shows considerable change in the proportions of various kinds of thinking before and after the teacher training program. Moreover, these changes appear to endure over time.

After teachers had participated in the training sessions the percent of time spent on actual thinking activities as opposed to routine or (i.e., non-instructional) activities rose from 59% to 72%. (The routine obviously made a corresponding drop from 41% to 28%.) This increase in the amount of time spent on actual thinking activities resulted in a marked rise in the amount of divergent, evaluative, and convergent thinking categories.

The amount of productive (i.e., divergent, convergent, and evaluative) thinking rose from 36% before the training to 51% after. This increase held, such that in the last (1970) year studied, it comprised 63% of the classroom time. Similar results have been found in investigations with different teachers who have participated in the second and third new years of the IMPACT program.

Teacher Self Concept vs. Teaching Style. Once instruments were selected to measure the self concept of a teacher, and the proportion of time spent in different thinking operations in the classroom, it became feasible to determine whether any relationship existed between these two variables.

To determine the extent to which self concept was related to one aspect of teaching style, specifically the amounts of various kinds of thinking operations a teacher used in the classroom and elicited from the students, the following study was conducted.

A correlation was established between the self concept of a teacher and the amount of various thinking operations he actually used in the classroom over a three-year time period. The data for the amounts of thinking came from the analysis of audio tapes collected for the productive thinking measurement.

Table 4 displays results of this correlation study and indicates that the higher self concept a teacher held, the more divergent and evaluative thinking occurred in the classroom.

Table 3

Percent of Time Spent in Various Thinking Operations
in Classrooms of IMPACT's First Year Participants

No. of Teachers	Dates	Thinking Operations				
		Routine	Memory & Cognition	Convergent	Divergent	Evaluative
93	pre-measure	41	23	21	8	7
79	1967-68	28	21	21	13	17
71	1968-69	25	23	23	13	16
71	1969-70	24	21	25	14	16
48	1970	22	15	26	18	19

Table 4

Teacher's Self Concept and Proportion of Classroom Time

Sample	Divergent Thinking	Evaluative Thinking	Memory & Cognition	Convergent Thinking	Routine
292 Elementary Teachers	.44	.51	-.40	-.21	-.39
47 Secondary Teachers	.38	.47	-.47	-.22	-.40

The lower the self concept of the teacher the more memory, cognition, and convergent thinking, as well as routine were used.

We have been pleased with the changes in teacher behavior indicated by the research. Because the program is extremely diversified and attempts to expose teachers to a variety of techniques for nurturing student productive thinking, we can't be sure what ingredient in the training program caused changes to occur in teaching behavior.

C. Your research stresses changes that have occurred in the divergent and evaluative thinking categories. Does this mean that you don't think convergent production is good?

S. I hope not. We have emphasized divergent and evaluative thinking basically as productive thinking processes. The other thought processes, memory, cognition and convergent, generally, as reproductive. We realize there is productive thinking in the convergent process, but too frequently convergent thinking in the classroom has been too much emphasis on the "right answer."

C. You can say that in every divergent process there usually is a convergent result but not necessarily the one right answer. It may be the best answer at the moment.

C. Your evaluation, which indicates significant shifts in the kinds of thinking occurring in the classroom, reflects, in a subtle way, the project's humanizing goal. I emphasize in my teacher training program, for the very beginning, that teachers must be respectful of student ideas and questions. Your project's research data show increases in the amount of evaluative thinking taking place in the classroom. It appears that teachers are more willing to permit students to do some evaluating.

S. We have never associated increases in evaluative thinking as reflecting a more humane classroom climate. However, it is only logical that in those classrooms where teachers stress student evaluative thinking, student ideas are respected.

C. We emphasize that the student set criteria of his own and make his own decision about some of the alternatives he gets divergently.

C. Yes, I think that makes a big difference. Teachers must be willing to permit students to set their own criteria instead of always imposing external standards. Students need experience in setting criteria for guiding their evaluative thinking.

C. Approximately how many teachers have you trained?

S. In a three year period, approximately 350 teachers, preponderantly from elementary schools. We, of course, have exposed

our training program to several thousand teachers. However, the research is based on intensive training which occurs over a period of one year. The training ends with a five-week workshop which involves the participants in a situation where the teaching-ideas can be evaluated in actual classroom settings.

C. I understand the program had been funded by Title III funds. How did you manage to have the program continue?

S. Dr. Norris and the Polk County Board have enabled us to continue to operate by providing local funds. In fact, Norris showed his foresight and administrative abilities by carefully setting the stage so that the public was asked if they wanted Project IMPACT to continue after the Federal funding ran out.

A public meeting was held on this issue. The spokesman for one organized group immediately stood up and tried to shoot down the proposal, primarily because it would cost money locally. However, many present who had experienced the project stated strongly that it was the one program in their district they did not want to lose; instead they said that other things could be dropped out of the existing programs. In other words, they definitely wanted to keep Project IMPACT as part of their county-financed educational program. Cal Taylor was even brought in to work with the county school district that day and to be available if needed in that evening public meeting, but the local public support proved to be so strong that the initial opposition was overwhelmed. In fact, the lawyer who represented the opposition group apologized afterwards for the stand he took earlier -- before he knew more about the Project and its merits.

C. Almost all private and public foundations, including the U. S. Office of Education, naturally want any program that they initially finance to continue to function after their initial "prime-the-pump" financing terminates. Yet the history of funding from the Office of Education has predominately been that when the outside (soft) funds are discontinued, the program soon fades away. In other words, the inside (hard) money is usually kept rather fully underneath the traditional program instead of somehow being shifted enough under the new program so that it will continue to exist and flourish after the outside funding fades away. Thus, the steps taken by Norris to shift the support to inside funding were sound and commendable and were very much in keeping with the intent of most foundations that support new projects.

Dr. Norris is now writing a book to administrators, encouraging them to be more effective as leaders and change agents toward better education for students, as displayed in Iowa's Project IMPACT and in other talent-focused projects elsewhere.

C. Were there certain teachers that you couldn't change?

S. I am sure we involved some teachers who were not amenable to change. When you work with statistical averages, many individual behaviors are lost. Also, we found teachers to misinterpret changes we were recommending. For example, nurturing of student thinking does not mean doing away with structure (as a few thought). However, the structure is based on facilitating student expression rather than stifling it.

One closing comment refers to self concept. Usually we refer to self concepts of students as being a vital concern, which it must be. However, teacher self concept must equally be a primary concern because of the apparent relationship between teaching style and teacher self concept.

Report of IMPACT '76
Helen Coe

S. The IMPACT Summer School has been offered for nine consecutive summers. Over the years, we have changed our mode of operation somewhat but have maintained two main thrusts: 1) to help teachers provide opportunities for students to develop their productive thinking talents in the classroom; and 2) to aid teachers in developing communication talents in order to enhance their relationships with students and with other adults.

We emphasize that the summer school is for teachers. They are urged to try new approaches, move beyond the safe and secure, and risk failing in a free-to-fail atmosphere.

We feel it is important that teachers not only learn about new methods, but "physicalize" them as well. That is our term for "putting into practice." If they will try it at IMPACT, hopefully they will be freer to attempt the same in their own classroom.

Particulars About the Program

At the cost of \$75, 110 educators in Area 11 are offered six graduate credit hours from Drake University for attending the five-week session. This money is used to defray operational costs of IMPACT.

These teachers are divided by grade level into approximately twenty teams; each team is responsible for teaching a particular group of students. Three hundred to four hundred students attend during the morning for four weeks. Each pays a \$10 tuition fee to the host district.

Participants teach in the morning. Visiting consultants, both local and nationally-known, and the IMPACT staff provide instruction during the morning option periods and afternoon general sessions.

Unique Aspects of the Program

1) At the outset, we made every effort to provide the setting for teachers to learn how to communicate with each other. Rather than teachers segmented into units, we hope they became friends who work as a team supporting, observing, helping and caring about each other. For this reason, the entire first week is devoted to group activities which provide team opportunities for: a) self disclosure; b) feedback; c) awareness of and expression of feeling; d) consensus decision making; and e) confrontation in dialogue. This week-long segment is one of the crucial aspects in developing teams into support groups for growth.

2) Each teacher is asked to observe one particular student in depth, and to record data about that student over a period of time. This written document serves as a basis for making recommendations for a planned series of lessons which meet that student's needs. Participants have been enthusiastic about this process in that it aids them in necessarily being student-centered in their teaching.

3) Each participant develops, schedules a time for, and teaches a particular lesson which is observed by two to five selected teachers and staff. The observing group helps by offering support, highlighting positive aspects of the lesson, and suggesting alternative approaches to the activity. A written account of the lesson is submitted by each teacher for a final printed idea book emanating from IMPACT '76.

Participants at first were apprehensive about peer observation, but in time took intense satisfaction in looking at self and learning with peers within a supportive framework.

4) No textbooks are used. Teachers, instead, offer students opportunities for thinking via many diverse activities. Opportunities to observe, classify, make decision, hypothesize, solve problems, imagine, summarize, look for assumptions are provided. Teachers with this approach become aware of the multiplicity of talents students possess. It is our job to heighten teachers' sensitivity to these talents. Also we strive to help teachers plan classroom methods which enable students to further develop their own unique talents.

In the foregoing paragraphs I have attempted to describe what we set out to accomplish in IMPACT. The following paragraphs from different IMPACT '76 participants illustrate the fact that we did indeed meet our goals.

IMPACT is definitely an appropriate name for this program! It has had a profound impact on me! Prior to IMPACT, I felt as though I was getting into a rut. Within a year my enthusiasm had been stifled to that of a robot. Everything seemed to be routine

or regulated. In only a few weeks, IMPACT had reawakened my desire and determination to make education fun and exciting for both students and me.

In these five short weeks I feel I have gained more knowledge and applicable experience than in any of the methods courses I attended in college. Creative thinking, multiple talents, productive thinking, interpersonal communication skills, divergent and evaluative thinking are just a sample of the many areas in which I gained more knowledge.

I have been made aware of the importance of the quality of questioning and to encourage higher levels of thinking.

In all my training never have I had such beneficial training. I think what I am most happy about is, really learning how to question correctly for thinking and also learning when not to question, but to listen.

I started to think better and to think about "thinking." Lastly, I've become more critical of my observations -- double checking for accuracy, since I have a tendency to jump to conclusions. I feel a sense of accomplishment -- more so than from most college education courses.

IMPACT means having experiences that I would not have been willing to choose for myself, but from which I have gained considerably. I have also begun to understand the necessity of being able to see the forest of process without being blinded by the trees of curriculum and content.

Everyone was more than willing to share ideas, activities and opinions. I think much of this willingness may have stemmed from the initial group process that everyone experienced. Our minds were broadened with less convergent thinking and more creative thinking, divergent thinking, experiences in multiple talents and teaching for thinking -- all of these processes that seem much more important to me now than they did prior to IMPACT. IMPACT also meant observations. Observing a child and determining sources of the problem is essential in correcting a problem.

The close observation of one student has had a surprisingly strong impact. I had never realized how much I could learn by concentrating on one individual.

The environment of freedom to explore was one of its greatest assets. For with this freedom I've felt that I could explore areas that I've been frightened to delve into before. The feeling of being capable is one of the best rewards of IMPACT.

Here at the summer institute I've tried many things I can't or am "too scared" to try at my own school.

Never before have I had such a delightful and rewarding educational experience as I had in IMPACT '76. You set the stage beautifully for taking risks and I found myself becoming increasingly more willing to try just about anything. I learned to do some things I didn't think I could do.

Never working before in a group situation, I have learned how to share my ideas and not to be crushed if they are altered. IMPACT built up my confidence -- leaving me with a feeling that I'm Okay!

It is the best program with which I have been involved for meeting my needs as a teacher. In a broad sense IMPACT meant ideas that stimulated enthusiasm, that inspired, and an atmosphere that was open and encouraged growth. I have gained a firm awareness of the importance of encouraging multiple talents in children.

I feel that one of the most important results in my case was the fact that I learned much about myself. For example, I had always felt that I was a fairly creative person. Then I came to IMPACT and realized that I was a mere novice in this area. I have learned new skills, different ones of which can be used in various units that I teach. Also in this area, I realize now that some of these things, which I had felt were out of place in high school, can actually be valuable teaching aids.

I really enjoyed thinking of an activity, writing it down (which really caused me to organize), teaching the activity and finally having it evaluated by people with whom I felt very comfortable and who had excellent suggestions. As a result of teaming, you are pooling ideas of five different people and also comparing notes about the regular school year. If I haven't learned anything else, I know that it is really really necessary to set up a comfortable, non-threatening, risk-taking environment so that each child will be able to think to their fullest for the short time that you have them.

PROJECT IMplode AT BELLA VISTA ELEMENTARY SCHOOL

Gilbert Stevenson
Jordan School District

The Bella Vista School in the Jordan District had several firsts in the Multiple Talent movement. The Bella Vista people are a prime example of those who are taking the initiative to improve things in their own classrooms. While others might have had an earlier start in the productive thinking categorization of talents, Bella Vista produced the first manuals focusing upon the Multiple Talents as displayed on the typical totem poles. The first time live students were placed on these totem poles occurred in Bella Vista. Their Project Implode also led to the development of the Student Activities Questionnaire (SAQ) which has gone through several stages of later development including becoming a major portion in Utah's statewide evaluation program, a leading program across all 50 states which evaluates the educational outcomes in students across a wide-assessment band of performances and accomplishments.

Also, Bella Vista should be congratulated for the many steps they took before they had any extra funding beyond their typical budget for running their annual teaching program. They went way beyond their call of duty for a few years before obtaining for their efforts any tangible outside funding -- except for district funding during one free summer period just before the first of a four year Title III funding. Then their level of funding generally was much less than most people would ever believe, because it was around \$20,000 a year, totaling probably no more than \$80,000 of outside funding for all the seven or more years in which their major developments and accomplishments and evaluations occurred. The Project Implode research results were at least as good as any from other talent-focused projects and better than any I've ever seen from any other type of educational program.

* * * * *

In the spring of 1967 I took some of our summer creativity workshop brochures to the Jordan School District Office and asked if Superintendent Reed Beckstead would distribute these throughout his district. (Several years earlier, two of my graduate students, Kan Yagi and Larry Siebers, did their master's theses by helping me conduct a job evaluation study covering non-academic employees in Jordan District for the Superintendent.) After the workshop brochures had been left with the Superintendent, the crucial contact in the district occurred when one of his staff, Virginia Merrill, stopped me in the hall and asked me if we shouldn't start one or more creativity workshops in their district. That autumn we managed to do so. Incidentally, Virginia Merrill was the replacement at the district level for Freda Jensen, who resigned to become the wife of Harold B. Lee (who later became the President of the L.D.S. Church).

We had persons from other districts help to launch the initial session of that first workshop. In a later, second workshop after a few sessions, I took my secretary, Connie Jensen, to the workshop and "pulled a fast one." We had the participating teachers working in six subgroups of five persons at round tables in the library, discussing some ideas they had been reading and hearing about in the workshop. We asked them to turn these ideas into classroom activities. In each subgroup they had a recorder who wrote sketchy notes of what they were formulating.

After a reasonable amount of time had transpired I went around and asked them: "Can I see what you have produced?" When they showed me, I said "it looks good, let me take it with me for a while." I took these six sets of notes and sneaked out and gave them to Connie, who went to a typewriter in a different room and typed them out on ditto masters and rapidly reproduced them. Then we gave them back to all thirty participating teachers so that it was almost "INSTANT PUBLICATION" -- without forewarning them and without their permission.

They were in a state of shock that we had published them so quickly in such a rough state and had given everyone a copy of all six sets of notes. We told them to look over the rough drafts and work with them before next week's workshop session.

That week they obviously worked only on their own stuff because it wasn't in any kind of shape for showing anyone else, let alone for professional printing. However, using only ditto reproduction was quite appropriate at that stage. After having worked on their own materials, next week all groups put considerable effort in polishing their own paper. Then we again dittoed their revisions and gave them all new dittoed copies of everyone's work. After a while they looked at and tried out other groups' work as well as their own. Soon they had produced six sets of activities that would work in classrooms. That was our first experience of getting teachers to be their own curriculum builders in writing up and producing exercises for activating and cultivating creativity and other neglected talents in classrooms.

When Beverly Lloyd was invited to give an October 31, 1969 presentation in Minneapolis, she asked for suggestions on what to do. Earlier in recommending that teachers "Be Talent Developers as Well as Knowledge Dispensers," I had used verbal descriptions of two students, with one being better academically and the other being better in thinking activities. I asked if she could do a similar sketch of two of her own second grade students on at least two totem poles. She surprised me by doing this for her first seven students (alphabetically) on six talent totem poles. This first totem pole presentation by her illustrated so many things so well that we have used it ever since, merely changing students' names to fictitious ones. Upon returning home, she arranged her other 21 students on three more sets of totem poles.

One or more of the Bella Vista staff have traveled to such places as New Hampshire, Miami, Manitoba, Southern California, Hawaii, and Alaska. Two of them visited and helped Mobile to get started on their Talents Unlimited Project.

Almost daily, many exciting things happened in that school, anecdotes of which flowed freely among their staff and often reached me later. My faith in humanity was renewed, whenever needed, by visiting their students in classrooms and at lunch, experiencing the exciting and enlivening effects occurring in them in that school.

Another of the many highlights happened during the summers in which several of the key Bella Vista people helped me run a workshop in Hawaii. The second year Gilbert Stevenson wisely invited Delbert Crump, the curriculum leader for the Jordan District, to accompany us to that workshop. Delbert returned home and decided to give this approach a district level priority at about the time that the Title III funding of Project Implode at Bella Vista was being terminated. Since then much effort has been expended toward programs for district-wide implementation. Gilbert Stevenson, Beverly Lloyd, and JoAnn Seghini all moved to the district office in order to work on implementing talent-focused approaches into more programs and schools in the district.

Since Virginia Merrill first sparked this effort, it has been very rewarding to experience the district's quiet and positive support from the top level, including from the succeeding Superintendent Donald Paar and his staff. Furthermore, there were no political complications in their top-level, district-wide supportive processes.

S. Along with a group of teachers in Jordan District I attended a workshop in the autumn of 1967 which was conducted by Cal Taylor at Ridgecrest Elementary School. It dealt with creativity and multiple talents. At the first all-day session a group from Granite District and a couple of people from Polk County, Iowa and Las Vegas (Clark County) Districts helped run the session. Other sessions occurred thereafter. It proved to be an excellent workshop in getting the people in Jordan District reading and thinking about creativity and becoming knowledgeable about the multi-talent area.

The following year I was transferred to the Bella Vista School from the Lark Elementary School where I had also been the Principal. Two Bella Vista teachers, Beverly Lloyd and Sue Matarrazo, also took that first workshop.

Initial Efforts at Bella Vista

At my invitation two more Jordan workshops were later held in the Bella Vista School. We had several very interested teachers at our school who took one of these workshops and joined the Bella Vista efforts.

Another group of teachers was formed in the district as a result of attending one or more of the three workshops. They began a multi-talent group across various schools in our district and they were also working in developing and experimenting with kids. Like us, they had some very exciting results related to the talents and to the totem poles and to seeing some of the kids actually become much livelier students and more active in their studies.

The workshops ended, but the Bella Vista teachers who had been involved accepted Dr. Taylor's challenge to become educational engineers and develop means to apply the researcher's findings to the classroom. That year was a very exciting one at Bella Vista. Our leading group of teachers were Beverly Lloyd, Sue Matarrazo, Mary Ann Zimmerman, Karen Timothy, and Karl Zobell, plus JoAnn Seghini who joined us from the Lark faculty after having taken the second workshop.

It has been an exciting challenge for teachers to view the student not only as a person to be taught knowledge, but mainly as a person with unlimited talents which need the opportunity and freedom to develop. The challenge was to determine the types of behavior students would develop to cope with our changing the world. As a result, we began discussing multiple talents, noting that too much had really been happening at Bella Vista before that time. So we began experimenting and investigating ways in which we could implement the teaching of multiple talents in students at Bella Vista. It began to be quite an exciting undertaking. As principal, I did teach classes of students on a part-time basis and I tried out different activities with the different grade levels and different students.

We at Bella Vista then began building and trying out a series of experience exercises dealing with each of the talent areas. After a small group of teachers led out in this effort, other teachers joined us and we really began to see the totem poles come alive with the students. We began recognizing that students did have different talents and that they could succeed in some talents, with this success seeming to lead to other successes.

We studied a lot and did a lot of the research and the background into multiple talent areas and we began putting the activities to work in the school on sort of an organized basis. During the month of September, for example, we worked with divergent thinking. And the next month we would work with convergent thinking. We would request that each interested teacher work with these activities and we would supply them with some activities to work with. And we had some very interesting things happen. One thing we discovered was that for us, divergence was not the area in which to begin. We later decided it was much better to begin with students with evaluative type activities so as not to lose the kids. We got them so excited with divergent type of thinking that some of them felt that was all they wanted to do was to think divergently. Of course, that doesn't make for the most organized classrooms. However, as it did

develop, we did have a lot of excitement. By the end of the year we had quite a group of teachers really working with us in the development of multiple talent type of activities. For example, Karl Zobell became quite excited about the prospect of helping kids develop in a wide range of areas, especially those kids who were not doing too well in typical ways of learning academic subject matter.

I encouraged other teachers in our building to start when they felt ready to do so. Many of them gradually moved positively in this direction, according to the research evidence, too. This generally kept a "single-team" feeling in the building.

We did have the opportunity of attending and teaching subgroups at several additional workshops. For example, I attended and ran subgroup sessions at several subsequent creativity workshops that were conducted at the University of Utah and elsewhere. We also had the opportunity of meeting Dr. Guilford at a workshop at the University where we learned more about his research on productive thinking and on his Structure of Intellect.

One summer we did receive some special funds from the district and had a special workshop for our staff. We began to write the activities we had been using and put them in sort of a sequence into categories dealing with the various talents and the various aspects of productive thinking. At that time Cal Taylor visited us and he also became quite excited about the types of things we were doing and the prospect of writing up our classroom activities, thereby putting together a booklet dealing with the "how to" of multiple talents.

At the time we had a very limited budget but Dr. Taylor sent his secretaries out to work with us and by the end of a three to four week period we actually had written up two books of activities. One book on "Productive Thinking" dealt with divergent, convergent, and evaluative thinking. The other book entitled "Talent Ignition Guide" dealt with multiple talents. Both were mimeographed and assembled in June 1970.

We then started to lay out a plan for some research to see just what could happen with the students as we worked with them with their productive thinking and multiple talents.

Initial Funding of Project Implode

We also wrote a request for Title III funding to carry on a research activity called Project Implode and this was granted to start at the beginning of the 1970 school year. This funding enabled us to continue the work that we were already doing and we did have a lot of stimulus from a lot of other areas to help us.

Project Implode was designed to produce teaching materials and techniques that will turn on the learners and set off the productive

thinking and multiple talent areas of their intellects. Through the use of experience activities, the talent areas are ignited, developed, and utilized, giving the student a wider range of options and intellectual abilities with which to meet the changing future.

The project goal was to gather and create materials, techniques, and strategies that will systematically develop the creative and other intellectual talent areas of each student. Many of the materials and techniques employed in this project have been used for years by successful teachers, but seldom for the purpose of in-depth training. Project Implode's basic premises were that each child has a vast reservoir of intellectual talent which the present educational system is not tapping, that these talents can be recognized and developed, and that their application will help each student to become a more complete, productive, effective individual.

The district began to be quite interested in some of the things that were happening. We worked with Robert Ellison at IBRIC in putting together an evaluation plan for the talent and the productive thinking areas with which we were working. Our main prediction was that we could in fact help students develop their productive thinking and their talent areas to a greater extent than they were at the time when we started with them. As the kids develop their talents and their thinking abilities, we also hypothesized that this would have a positive effect on their academic areas of the curriculum. We then proceeded with this hypothesis.

Instead of looking for creative students and teachers, we decided to develop a process that would help each student and teacher develop creative capacities. The subject matter curriculum became a tool for the development of talents.

Our students read to answer questions, to find information, to support suppositions, and for fun, but not merely because it was time to read. They studied word attack skills, phonetics, syllabication, etc., because reading is a tool needed to develop their talents. They didn't study history but they studied historical significance.

We do study math because we need this tool to build bridges, furnish houses, plan new school buildings, calculate the time element in a trip to Saturn, buy stocks, or figure interest rates. Social studies are now -- they are us. Social situations throughout history and around the world are important because each student is part of the world. Economics happen every day. Our teachers don't say "this is how it is." The students say, "why?" "how much?" "why not?"

Science is all around us and we try to bring it in and put it to work. Few projects are too complex for a seeking mind. Textbooks serve as sources of information, not as the curriculum. Our students use them, question them, and even write their own texts, since in many cases the texts are not adequate to answer the type of questions our students ask. Our teachers have learned to listen, advise, and

guide, rather than lecture, correct, and assign papers. The learning environment becomes an interaction of ideas: student-student, student-teachers, student-parent, teacher-teacher, and teacher-parent.

The following spring of 1971 we put together our two earlier mimeographed booklets into one printed book which we called Igniting Creative Potential. Dr. Taylor wrote the foreword to this expanded and polished manual and the staff of Bella Vista worked very hard in putting the book together. It consisted again first with a series of activities dealing with the three parts of productive thinking and also the five new talent areas of creativity, planning, communicating, forecasting, and decision-making.

Then again, we systematically worked with the students. When I say systematically, I mean that we tried to work in different areas at different times so we could support each other as teachers. It should be understood that each teacher was working in the way in which that teacher worked best. The teachers, of course, had a great deal of freedom as far as creativity and as far as really applying the way that they best felt the activities should be applied. We did evaluate the project's progress at the end of that year with the help of Dr. Ellison and his staff and we had some rather promising types of things that had begun to happen with our students.

One quite notable thing is that we did rise to the number one school in Jordan School District as far as academic skills (standardized achievement test scores) were concerned, even though we were definitely not a top socio-economic school. Now these scores were as they are measured with Iowa Test of Basic Skills Norm-referenced tests. It is interesting that Bella Vista has maintained that position as being very high in academics in our school district ever since. This occurred even though academic performance definitely was not the main area of our new efforts. We were, of course, aware of the academic areas of reading, writing, arithmetic, and the other areas that norm-referenced tests evaluate, but our main thrust was productive thinking and the multiple talents. In addition, we had some very positive types of results using some of Torrance's evaluation devices and others that Ellison and Taylor put together.

We also began to build an instrument along with Ellison that was called the SAQ (Student Activities Questionnaire) to evaluate to some extent the classroom climate. This would get at the extent that students were being individualized in class, that students self concept was being enhanced, and so forth. We were also trying to look at the extent that students were taking home the types of things they were doing at school. We really were trying to get at the effect that multi-talents teaching was having on the functioning of the students both within and outside the school. That instrument is still being further developed and we are continuing to use it in evaluations in Jordan School District.

The Title III funding which continued for three years was a research and development type of project. We began to have numbers

of visitors from all over the world -- from India, Japan, England, just to name a few, and, of course, mostly from areas within Utah and from immediate states around Utah. We did keep a record. For several years we had a sign-in book of our visitors and we logged over 500 visitors a year from outlying states as well as the educational institutions around Utah and again each year our evaluations were very positive.

During the third funded year the project was good enough that we were asked to look at national validation for the project, but really didn't receive a lot of encouragement from the state office. Our funds were low and our spare time limited by the above demands, so we really didn't pursue that. We did conduct a number of workshops for different school districts in Utah and out of state, for Junior colleges as well as school districts. In the 1973 year we conducted a series of workshops for Jordan district teachers -- both high school, junior high, and elementary teachers. So the project really began to spread throughout the district in helping teachers become more aware of the talents of students and of their abilities to think and the development of their productive thinking. Dr. Taylor has access to all of the assessment instruments which we used and pretty much has the results that were obtained and were quite positive in favor of Bella Vista.

The third year of our evaluation we did use schools in another nearby district as control schools. We asked them for their very best academic and very best schools -- schools that were really doing things. I think most schools that we did use as control schools ended up being schools funded for another project. Nonetheless, our evaluations were all very positive in comparison with the control schools.

There was one other aspect related to evaluation, namely a follow-up study. Several people at BYU became very interested in the multi-talent project. Wesley Craig, professor of sociology at BYU, became interested in our project and visited our school three years in a row. We had run workshops for some of his students and had many of his students visiting our school. He had three doctoral candidates who worked with him in conducting a longitudinal study. He was interested in the effect that Bella Vista and the multi-talent project was having upon students who were going into Junior High School. He received permission from the district for a study, selected a hundred random students at Butler Junior High to which Bella Vista was a feeder school, and took a hundred random students from Bella Vista in the 7th, 8th, and 9th grade. He compared over twenty variables with these two groups of students. With one exception, Bella Vista students surpassed the control group in the expected direction, and the one exception was sort of a tie.

Results of specially constructed measures of pupil and teacher reactions to classroom activities indicate that former Bella Vista pupils have adapted better to junior high school and in the narrower band are functioning better than a comparable group of

classmates who attended a highly structured elementary school. In about 95 percent of the comparisons, scores of the Bella Vista group are higher, nearly half of them to a statistically significant degree. This is true despite the evidence that former Bella Vista pupils prefer the school climate from which they came. There have been other follow-up studies. JoAnn Seghini just is finishing a study which she is doing with students in the 9th grade who were at Bella Vista in relationship to the effect that the project did have on them.

Movement of the Main Efforts to the District Level

We are using and have used and continue to use the multi-talent approach in Jordan School district. Starting in school year 1974-5 I was asked to move to the district office as a curriculum consultant, as were Beverly Lloyd and JoAnn Seghini. That year we did conduct numerous workshops throughout the district for teachers, relative to productive thinking and multi-talent teaching.

As a result of needs assessments in the districts we also realized that the district needed some real work in the basic skills areas and started what we call our Goal-based Educational Management System (GEMS) Project dealing with the basic skills of reading, language arts, English, and mathematics. The productive thinking and multi-talents format has been brought into this project to a great extent as the strategies which are suggested to help teachers to develop the basic skills and basic skill competencies in students.

We also became quite involved throughout the country with a number of gifted programs or programs for gifted and talented students. In fact, the book, Igniting Creative Potential, has been very widely distributed. We've sold over 10,000 copies of this book (manual for teachers). I suppose that at least 80% of those copies have gone to school districts or areas and are being used with gifted and talented students. That isn't exactly our intent. Our intent was that potentially all students are gifted. However, the format being used across most of the country with gifted and talented does line up very closely and with the multi-talent productive thinking. In fact most of the people in the country are looking very much at Guilford's research and the productive thinking areas as they work with gifted students.

We have subsequently written a project for gifted and talented in Jordan School district in which the basic format of the program at Bella Vista is being incorporated. Right now there are workshops being held each month for all of the 5th grade teachers -- that's about 105 teachers in Jordan District. They are systematically applying and using the activities to develop giftedness and talent-edness in students. Again the teachers are using this method in their own fashion but so far we feel this project is going to be very effective.

A recommendation for those interested in adopting teaching for multiple talents is largely to begin at the beginning and start by experiencing talent development with students and by experiencing various activities with students. We feel that it's quite obvious as teachers do get the feeling of what students can really do. Then they'll realize that this is a rich area and an area that really can be further developed with students. There are a lot of different programs now available dealing with critical thinking or productive thinking or evaluative thinking. I think more and more people in education are realizing that we really have an obligation to help teachers develop thinking skills in students.

With the career education movement there is a great deal of emphasis on decision making, which is of course one of the talent areas. And of course, we've found the best way to help a student develop his decision-making skills is to start at the beginning and start with the student in the Kindergarten, first grade, and give them opportunities to make decisions and then learn to evaluate the type of decisions they do make, and to really break decision-making down into components and to see what they actually do when they make a decision, the ability to look at data, to discern what the data are telling us. So we feel that there is a real future in the multi-talents and productive thinking.

We are emphasizing that type of thinking now more specifically with basic skills because we feel that that is an area that is probably more accepted by the public and an area that we really have a great obligation to help students develop these skills and become more functional. But of course the talent areas line up with them very well. Jordan School District in general feels that the multi-talent teaching and productive thinking are very much alike. They are being stressed in many more of our schools than before. However, with three of us moving from Bella Vista to the district offices, with Karen Timothy dropping out of teaching to raise her family, and with Karl Zobell's unfortunate death from cancer, only two of our leading team remained at Bella Vista, so the center there is generally not at the level that we once had. Some new developments are occurring at Bella Vista. We also hope in the future that we can possibly spark several schools in the district to attain the high level reached earlier at Bella Vista so that we can have more emphasis and more teachers working with kids in developing their talents.

In the future world in which our students are going to be living, information of all types is going to be at their fingertips supplied by computers and other instruments not yet dreamed of. Education then must prepare them to be creative, thinking, productive learners who can cope effectively with and conquer the changing world.

NEW MEASURES RELEVANT TO TALENT-FOCUSED EDUCATION

Robert Ellison
Institute for Behavioral Research in Creativity
Salt Lake City, Utah

S. As many of you know, I am with a non-profit private research organization whose activities have been concerned with the identification, development, and use of talent. We've had support from a variety of organizations -- Department of Labor, Public Health Service, U. S. Navy, and others -- and conducted studies on scientists, engineers, artists, nurses, and leadership. Our specialty seems to have evolved, more than anything else, towards measurement, statistical analysis, instrumentation, etc. As I look over the people in this room, I see I've had the chance to interact with a lot of you over many years, and it's been an enjoyable experience.

One of the activities that's been going on fairly constantly since the original Project Implode in Jordan is the periodic development of the Student Activities Questionnaire (SAQ). The initial form of the SAQ yielded the following eight scores: Individualized Instruction, Enjoyment of School, Classroom Participation, Career Development, Self Concept, Independent Development, (Self Management), Democratic Classroom Control, and Multiple Talent Experiences.

I'd like to comment on the history of the SAQ. The evaluation funds at Project Implode were very limited, so all the test development and measurement work had to be done on a very short shoestring. Tests were designed one day, pilot tested the next, and modified the following week, and that's the way we started to grow. We had a lot of fascinating experiences in watching the project staff, as well as the project, develop. A lot of you have seen the experimental results that came out of that study.

One of our early concerns was trying to capture what it was that teachers were doing differently. Not only would this be valuable to describe differences between the experimental and control schools, but it would provide us with a vehicle for monitoring the treatment effect in trying to explain outcome results. As a result of three or four projects conducted since then, each one building on the previous one, the SAQ which started out in Bella Vista was recently used in the Utah Statewide Assessment study on a sample of approximately 8,000 students. This was a fairly large-scale project conducted with the cooperation of the Utah State Board of Education. Some of the results obtained are illustrated in Table 5.

The measures down the left of the table are the educational process measures that grew out of Project Implode. The only new one there is Expectations which was developed specifically for this study. By educational process measures we mean what goes on within

Table 5

IMPORTANT RELATIONSHIPS OF EDUCATIONAL PROCESS MEASURES
TO STUDENT OUTCOMES

EDUCATIONAL PROCESS MEASURES RELATED TO	STUDENT OUTCOME MEASURES
INDIVIDUALIZATION OF INSTRUCTION Measured the degree to which certain procedures were used to adapt learning processes for the individual student's needs, e.g., having different students work on different learning tasks, providing students with different materials to choose from in completing an assignment, etc.	Productive Maturity: Independent Development Social Maturity: Peer Relations
REINFORCEMENT OF SELF-CONCEPT Reflected student's perceptions of whether good performances were recognized and whether they were encouraged to feel pride in their work. High scores were obtained when students had a change to see things other students had done well, were encouraged to tell each other that they had done a good job, were told when they had done a good job, etc.	Emotional Maturity: Academic Self-Concept Social Maturity: Peer Relations Enjoyment of School
CLASSROOM PARTICIPATION Measured the amount of open discussion in the classroom and the degree to which students were encouraged to take part. Classroom Participation can be increased by encouraging students to speak out and take part in class, to ask questions, and to take part in discussing subjects not closely related to the class subject, by having activities which require these kinds of participation, etc.	Emotional Maturity: Academic Self-Concept Social Maturity: Peer Relations Productive Maturity: Independent Development
DEVELOPMENT OF CAREER TALENTS Measured the reported amount of training students received in skills which had broader application than immediate academic content, e.g., evaluation activities, and discussions of aspects of the future, potential application of classroom material learned to various job situations, practical uses of learned material, etc.	Productive Maturity: Independent Development Enjoyment of School
EXPECTATIONS Measured the students' perceptions of the amount of effort or hard work required of them in their class, e.g., whether the students were expected to do their very best, to try hard, to do a lot of work, whether their assignments required a lot of hard work to complete, etc.	Intellectual Maturity: CTBS Mathematics Aesthetic Maturity: Music Achievement

the classroom, i.e., the atmosphere or climate within a classroom, what kinds of teacher-student interactions exist, what kinds of tasks (or opportunities) occur, etc. Students can describe these activities very well, and they generally agree about what goes on in the classroom. The scores on the right are different kinds of outcome measures, recognized by the Utah State Board of Education as being crucial to each of their goal areas that we've studied. You'll notice that the process measures had a very meaningful pattern of relationships with the outcome measures.

The instrument -- the SAQ -- is quite sensitive to differences between classrooms, between teachers, between schools. When you measure a classroom taught by a teacher like Mary Ann Zimmerman in a school like Bella Vista, you will find that her classroom had much higher mean scores across these process measures than a random sample.

We have developed a computer program now, which was first used efficiently in the Murray State Project. We had the technology available earlier, but we hadn't sold it to anybody yet. But then Jay Hainsworth came along and asked. Basically, what we provided him was: four scores for each student and, for each teacher, the two highest and the two lowest scores for these process measures. We didn't describe them as the lowest scores; we described them as the two scores where there was the greatest opportunity for improvement. In this way, each teacher was given helpful feedback about how the students perceived their classroom. I'm convinced that this has to be done in a very positive, supportive kind of way.

With this kind of automated feedback, it is possible to do the scoring for a fairly large school district in an economical manner, providing feedback directly to teachers about how their students perceived their teaching process.

Another area in which we've done a lot of work is with Biographical Inventories. A Biographical Inventory (Form U) was used in the Murray State Project and some scales were also used in the Utah Statewide Assessment Study. Previous research studies on Creativity, Leadership, Academic Performance, etc., have provided us with key behaviors or indicators of how individuals are likely to perform in the future. Essentially, the rationale of the biographical inventory is that a person's past behavior is a potent predictor of his future performance. The biographical inventory consists of about 150 items completed in about one and one-half hours. The latest form we have put out is the one we used in Kentucky and it contains six scores:

- 1) Academic Performance -- cross-validities in the .60's and .70's against academic performance criteria have been obtained with this score. This score has been used to predict the academic performance of Black, Chicano, Chinese, and white students, with highly significant validities and a lack of cultural discrimination.

2) Creativity -- assesses a number of components important for creativity, including independence, autonomy, and originality, as well as the extent to which students participate independently in self-initiated learning activities, which increase their general competency.

3) Artistic Potential -- measures the participation of the students in artistic endeavors and the attitudes of the student toward art and music. This score predicts the level of artistic achievement on the part of the student.

4) Leadership -- predicts the student's level of leadership ability in a wide range of activities.

5) Career Awareness and Exploration -- measures the degree to which students had given some thought to and had some experiences related to career choice. This score deals with the individual's level of maturity and awareness in making effective career decisions.

6) Educational Orientation versus Dropout Potential -- predicts how long a given student is likely to remain in school and has implications in the prediction of juvenile delinquency. Higher scores represent a tendency to stay in school and lower scores a tendency to drop out.

Table 6 shows percentile ranks across these scores for seven selected sets of students, namely; two students high in Academic potential, three high in Creative potential, two high in Arts potential, three high in Leadership potential, three high in Career Awareness, three high across nearly all of the first five scores, and three not very high on any of the first five scores. These sets of students merely illustrate the complexity that can emerge from a profile of six such scores, together with the challenge of trying to search for greater insights into why students with similar profiles across the first five scores can differ so widely in their likelihood of remaining in or dropping out of school.

We look forward to doing continued work with instruments or approaches like these that will help to identify, develop, and use our human resources effectively. Let us know how we can help you in your activities.

Table 6

Percentile Ranks Across Six Different Scores
from Form U of the Biographical Inventory

Students	Academic Potential	Creative Potential	Arts Potential	Leadership Potential	Career Awareness	Educational Orientation vs Dropout-Prone
A	95	9	51	26	32	80
B	88	15	11	54	12	23
C	32	83	80	82	88	84
D	51	92	64	14	82	43
E	72	83	11	48	56	27
F	11	69	98	5	44	58
G	24	17	81	48	16	38
H	55	11	34	85	72	97
I	43	61	56	93	44	63
J	18	14	27	91	16	31
K	14	15	50	74	96	27
L	14	13	33	72	82	24
M	22	53	34	54	96	13
N	65	94	77	68	99	90
O	97	98	89	65	95	77
P	95	96	68	93	94	38
Q	36	6	33	9	11	92
R	11	69	39	59	38	16
S	61	28	66	65	38	13

³Available from the Institute for Behavioral Research in Creativity (IBRIC), 1570 South 11th East, Salt Lake City, Utah 84105; (801) 487-3209.

CREATIVITY IN LARAMIE

Mignon Hill and John Hill
Laramie Public Schools and University of Wyoming
Laramie, Wyoming

Next we have a report from Wyoming from two of our favorite people. Groups from here have been to Cheyenne more than once and to Laramie several times. The person who has been head of the Gifted program in their state is a Utahn. My highlight of an earlier year was at a Wyoming Council for Exceptional Children (CEC) meeting in Evanston; it is in this corner of their state right next to Utah. The teenagers who were in the state mental hospital were the group with whom I worked. They had helped to plan the conference before we arrived. They were a fascinating group to work with and many of them displayed high levels of creative thinking. These youth said that if school had been like our sessions, they may never have gotten into the difficulties leading to being hospitalized. I consider it my highlight of that year.

Last summer in Hawaii, two things occurred, one right after the other. One subgroup was going lively and one of them said aloud that things will never be the same in Wyoming. He was from Torrington. Then, the other thing occurred when I said let's break into subgroups: All the islanders go to one corner of the room and the mainlanders over here to the other corner. The same group burst out saying "Oh, no, if the islanders leave our subgroup, we'll lose all our talents." That's as high a compliment as they could have given to the Hawaiians.

Mignon Hill: My husband, John, teaches Engineering at the University of Wyoming, and I teach art in the public schools -- elementary art. We've come to several creativity workshops in Utah. I don't think things will ever be the same in Wyoming, since we came to those workshops and heard the possibilities that Cal has envisioned for children. When I think of Cal Taylor, I think of some words he put on the board the first time I saw him that have been inspiring me ever since. If not you, who? If not here, where? If not now, when?

When I think of Laramie, Wyoming, I think "If not here, where? Let's get busy." I've been seeing familiar faces all morning of people who came to Laramie and helped us get started with the Multiple Talent Approach. At this meeting perhaps we can figure out just what things are going on in the country that are not called "the Multiple Talent Approach," but are offshoots of MTA.

Right now I'm involved in a Title III-IV program in the arts, integrating the arts with other subject areas, called "New Directions in Education with Arts." It might very well be called Multiple Talents. Certainly, I have to give the credit for what

we are doing to Cal and his team and the work that they have done in Wyoming that got us started. We've had workshops both in Laramie and Cheyenne, and we had a Title III program that was a direct Multiple Talents Approach Program.

Our school system was greatly helped by this approach. In Laramie, it's not the same school system as it was before. It's much more open. Teachers are more creative and they're becoming more creative all the time. Cal seems to be able to open the world to the teachers, as well as to the children.

The possibilities are unlimited and teachers get so excited they go off in different directions, but still the same roots are there. Cheyenne and Laramie have had influence around the state. I've been doing workshops in my area and throughout Wyoming. As Cal said in his note, maybe things are ripe to move further in Wyoming than they have been in the past. Certainly they are headed that way. There is not much more to tell you, other than that we are moving.

C. I recall that we drove to Laramie to visit their public school leaders and to see a football game between Utah State and Wyoming. When we got there late Friday they put on a demonstration in the evening of all the things they were doing. We met in the school gym and we didn't notice until later that there was a scoreboard and it was running up pretty fast. At the end of the evening we noticed that the score was 99 Home Team, Visitors from Utah 0. Then the next day we put on our team and the score slowly climbed above zero. I think the beautiful thing was that the score ended up 99 to 99 -- and we visitors didn't ever touch the scoreboard.

John Hill: I welcome the idea of a reunion like this. It gives us a good chance to trade experiences. We've followed the Multiple Talent crowds in many places, even when we had a chance to be in Des Moines. We said let's go see "Polk County, Iowa," and see what they're doing. When we were out in San Diego I remembered that Irv Kaplan, who lectured here at our short course, was connected with the U. S. International University. So, we went out and found USIU, and while he wasn't there, we saw plenty of others.

As an engineering professor, I think you probably can sympathize with me. I have as tough a time as anybody in the world to try to get some creative, or innovative, teaching going around an engineering college. The hard-heads there just will not see it. They don't know what I'm talking about, or they haven't, until one sort of a fortunate thing happened. The engineers were all scared that the dropout rate, the attrition rate, was too great -- like 50% of the classes were dropping out before they graduated. Also, they had a jar or two from the outside world -- industry -- who said "your graduates can't do anything when you turn them out. We still have to take them and teach them afterwards."

Therefore, many engineering schools began to work on something called Project Engineering, where the students not only study a bunch of theory, but then they put it together in building an actual project. This may be something very comical and tangible like having a contest for concrete canoes -- boats made out of cement that float, and the one that floats the fastest wins. Or it might be a much bigger project that takes in all phases of calculating and planning, such as how to H-bomb a small asteroid that's about to crash into the earth -- how to destroy it a thousand miles out, with bombs. Well, everything in the world in between can be called Project Engineering, where we really try to apply what we're learning.

Our schools started a little course in it, and the person who overrode me in the committee meetings in making it a two hour credit course, instead of a one, promptly left for Virginia University. He left me inheriting the whole thing in a fashion that I did not like. I took hold of it and for the past ten years, have been the main professor teaching Creative Engineering Design, a freshman course. This is before these students get in and get too jaded to subvert them right away. I try to show them that a prof can be cheerful and that we can sit in circles and discuss, for a third of our classes, do a little calculating and problem solving in between time.

Each one has to design and invent and draw and sell his own project to the class. It's the hardest thing in the world to get this across to them. It has to be their invention. We don't care what it is; we hope it's important; but at least nobody else ever thought of this invention before the student thought of it. It takes quite a while to gear them up to that -- maybe one-half of the term -- but finally most of them get going and they do really good jobs with their project, usually. Some of them are still kind of pathetic, though, and I have to be careful with my subjective judgments.

The high point of this course, as far as I'm concerned, or of my experience in teaching, came two years ago at the engineering honorary banquet, Sigma Tau banquet, at which about six students put on skits or made little speeches. Some of those speeches very frankly razed Professor Hill, calling him Crazy John. Well, towards the end of those six speeches, I began to total up: four of these six putting on the programs at this banquet were graduates of my creative engineering design class. I took pains to tell the Dean that. Maybe those confident, bright seniors got their start in my class.

But the past two years, this class has not fared so well for two reasons: larger classes, hard to motivate, and larger proportions of hostile sour-faced tall "cool" boys that are triply hard to motivate -- especially in an 8 o'clock class.

How can I guide a group discussion in a class that number 29 -- way above the magic 15 limit?

C. Our former Dean of Engineering, a prolific inventor, said that earlier in his career he went out recruiting people and could not find from any college of engineering one that could tell which students were innovative or inventive, or imaginative, and that seems to be quite a common finding in such colleges. This year in our Engineering College they had a contest to produce devices that would climb straight up the wall. Some of my students from engineering said that immediately everyone started with very original designs, none of which would work. Then they had to add soundness to those designs and the one who won was one of my students from last year's human engineering class.

I met a person, John Martin, the "senior statesman" researcher at FAMA in Monterrey, Mexico -- on my only trip deep into Mexico. He asked where the best creativity education in engineering was occurring. I told him it was an unsolved problem every place I knew, including here. He said he had good creativity training throughout his engineering program. He had three new creative projects a week during most of the time in his engineering program. So I asked him when and where. Surprisingly, he said in Lithuania in 1938. So creativity in engineering education has not stayed up at a very high peak at all times, perhaps not again attaining that peak level in engineering since the 1930's.

TALENTS UNLIMITED PROJECT

Sara Waldrop
Board of School Commissioners of Mobile County
Mobile, Alabama

We're now to Mobile. The Talents Unlimited Project had its initial impetus in New Orleans. I participated in a small ASCD-sponsored meeting on Humanizing Education, along with Frank Schneider, an Assistant Superintendent in Mobile. On one occasion there, Frank missed an opportunity. Instead of being angry and resentful, he became envious and wondered why he hadn't turned on some talents and captured the opportunity himself instead of sitting and waiting in his car for those of us who did. He then said, "Why don't we get more of these talents functioning in our students" (as well as in himself)? So at this New Orleans meeting where I met Frank, he said, "Why don't you come to Mobile some time?"

Later, Virginia Merrill asked me to speak in Houston at the annual meeting of the Association of Childhood Education (on whose board I once served) but I had no way to finance a trip to Houston. (Virginia Merrill was also the one who asked me to conduct workshops in Jordan and through these workshops I first met Beverly Lloyd and Sue Matarazzo, and eventually helped to spark the Bella Vista Project Implode.)

Anyway, I phoned Frank and asked if I could schedule a visit to Mobile by way of Houston. He said yes, so I did. I met others in Mobile and gave a presentation which was videotaped there by an ex-Utahn.

The second time I worked with their school district, I was taken to an all-black school in a poverty area. Many of our traveling task force team members had always dreamed of this opportunity, so I said I wished I had one of my demonstration teachers with me. But they told me, "Today, you're the demonstration teacher." So I recruited the classroom teacher, Bessie, to help me. We found the young black students to be very responsive and after several talent activities, all ended up spontaneously singing.

It rained heavily down there that day, so I ask the black kids, "What if it should change to snow and just keep snowing and what if we all got snowed in here, at school?" Their responses were just great. Then I told them about the Utah mountains with snow on the ski slopes being over 12 feet deep (in most winters). Like the Pied Piper case, they all would have followed me that day back to the Utah mountains.

At a second school in a high socio-economic district, the kids opened up wonderfully, so much that they swerved the topic and even told all the reasons why they hated school. This didn't win any points for us with the teachers or administrators observing,

but instead it sent a bolt of fearful lightning through them, which consumed their luncheon meeting discussions. Meanwhile, I had lunch with the kids and they were all highly excited, like birds flying on Cloud 9.

The third Mobile visit was by Beverly Lloyd and Karl Zobell of Bella Vista and Bill Clark from Iowa. They met Carol Schlichter, the initial project leader whom I still hadn't met, and later told me how well she was teaching the students in her class. Talents Unlimited then got started with three years of Title III funding, led by Carol Schlichter, with an all southern-belle team with six different southern accents.

Sara has done a tremendous job in replacing such an effective person as Carol. Sara has been the project leader in their fourth and fifth years, the initial years on the USOE National Diffusion Network and has kept the project alive during the interim non-federally-funded year. Mobile plans to serve both their own students and simultaneously students across the nation through the National Diffusion Network. Their Talents Unlimited Project is the only exemplary project for Gifted/Talented programs on that Network.

S. As Dr. Taylor said, Talents Unlimited started in New Orleans. It came to a temporary halt in New Orleans yesterday when the luggage didn't change planes. Texas International gives a survival kit to travelers with lost luggage, but they can't help us with the handouts we had packed for you. Instead of handouts, you get a Christmas story.

One morning, about three weeks before Christmas, Sister Eleanor Uhl at St. Catherine's school called her little ones to the rug. Then she said, "For Language Arts this morning, let's write a story about Santa Claus."

They were ready because Christmas was in the air.

She said, "Now think a minute about what it is you want your story to tell."

After a few minutes Sister said, "Are we ready?"

Hands shot up. One little fellow stood up and said, "Santa Claus is thinking of many different unusual toys to bring to boys and girls," and Sister Eleanor was startled because what that child had said was the set of behaviors defining the Productive Thinking talent.

Sister recovered herself replying, "All right" and wrote the sentence on the board.

Another hand went up. The student's sentence was "He is using his Productive Thinking talent."

Sister wrote that on the board. By then she was past shock 50, so she asked, "What else do you want to say?" They responded, "That's it."

They felt that if Santa Claus does what he needs to be doing, he uses his Productive Thinking talent and that was enough said.

Sister realized that they were in a Productive Thinking mood. She led them on and they informed her that they wanted to think about and produce some of those many different unusual toys for Santa. Then, on their free time, they worked up some unusual toys. They illustrated them, cut them out, and put them around the bulletin board, where she had put their story. They said they thought Santa Claus ought to get a chance to see the list. So Sister took the list down to the Mall where Santa Claus was, and shared the list with him. She came back and told the kids that Santa Claus was grateful. They let her know they would be expecting to see some of those toys!

This is the same class, who one day went out to Physical Education. They were having trouble with their water fountain and were expressing disgust with it.

One little fellow said, "Sister, we're simply going to have to Productive Think this thing."

Sister said, "Let's."

They brainstormed ways in which it could be improved. Then they felt that the company ought to know about it. They composed a letter to the President of the company that manufactured the fountain and sent it off. In St. Catherine's school today there is a letter and a plaque from the President of the company. The plaque is made of a water fountain faucet and is inscribed with a message of appreciation.

This lets you know what it is all about with Talents Unlimited. These kids had only been in school since September and had already internalized the behaviors of Productive Thinking to the point that they put them to use in their everyday affairs.

This is the way we went at it from the beginning. From the very beginning, we said, "We're going to do this in a systematic, structured, life-related way. We're going to take the six talents that Dr. Taylor has identified, we're going to operationally define each talent and let the kids in on it. The kids knew what to do when they did Productive Thinking. The teachers learned how to make talent activities integral to the curriculum and they helped each child find his best way of thinking. People have asked us many times, "What it is all about?" It just boils down to a very simple thing. We, in Talents Unlimited, teach kids how to think -- how to process information and make it work for them.

We're talking about a three year research project, where we developed a three-pronged process model: First, a sequentially ordered, competency based training program for teachers. Second, a large book of multiple talent activities which we also use in training teachers to activate the talents in their students.

The third part of the work we did was to develop a criterion-referenced test battery. We do not perceive it as a perfect test battery, but it's a beginning.

We had all kinds of bonus things that happened to us. It was so interesting, to me, this morning when Darrel Allington was talking about how they were trying to find different talents in teachers. That was a bonus for us. We were focusing on talents of the kids, not on the teachers. Nevertheless, one of the by-products we had was that teachers discovered their own talents. They would share with us that they had discovered what their personal problems were. For example, one might say, "I have trouble making decisions, and I didn't even know it until I started working with the talents."

Someone spoke this morning about pre-service. The second year of the project we designed a practicum to pre-service undergraduate students. It was a semester-long practicum so we were able to provide them with field experiences in talent teachers' classrooms. Then, when they became student teachers, they were placed in a talent teacher's classroom to be given another semester of on-the-job experience. We've had follow-up data on those teachers. They are just sparkling as beginning teachers because they had another dimension added to their methodology before they ever soloed.

For two years now, we have diffused nationally. Talents Unlimited is becoming well diffused. This last year when the national diffusion money ran out, we worked locally in our own schools. Because we had a mandate that reading must be the priority and because our curriculum division had just revised and written up the Mobile Reading Plan, we decided to focus on reading, too. What we've done is trained teachers to apply the Multiple Talent Approach to Teaching in the areas of reading. Although our basic work was primarily in elementary schools, we've also moved as much as possible into the middle and secondary schools in all of our work.

We're now writing a proposal to get us back into the National Diffusion Network under the General Education Provisions Act, which is supposed to be money coming in for as long as we function well. There are three roles played in the network and all three are representative projects. The Talents Unlimited parent project is the developer-demonstrator in Mobile. All of these people present who will add to the key things I've said here are called adopters, local educational agencies. Leon Worthley who is here from the State Department of New Hampshire is a facilitator, a liaison person between developer demonstrators and adopting agencies. That's the

way the network is structured and it is proving to be a highly successful, cost-effective diffusion model.

We are honored to be on the Multiple Talent team -- a team that's filling the stadium nationally and internationally. As of May 2, 1977, Talents Unlimited is again diffusing nationally as a Developer Demonstrator Project and is establishing an Extension Center in the Salt Lake City region with Dr. Taylor as the Center Director.

Talents Unlimited Needed in
Pre-Service Education
Carol Schlichter
College of Education
University of Alabama

During the fourth year of Talents Unlimited, Carol Schlichter went to Europe to teach in Greece for a year, during which time she generally spread the word about the multiple talent approach. She also spoke at an international conference in Madrid. The following year she accepted a new position in the College of Education at the University of Alabama. She could not attend our conference having been scheduled by her university to work at a regional conference at the same time. For this report she wrote the following:

Carol Schlichter: I am sure you know, via Sara Waldrop, that the Multiple Talent Approach (MTA) is far from fading: rather, it's coming into full bloom in this part of the country. I continue to do follow-up work with adopting school systems; in fact, this week I am doing a regional conference specifically on Multiple Talents in San Antonio, Texas. Also, my work with a large federal project at the University has me consulting all over Alabama, and the demand for help in the talents increases daily; I have done special presentations in the state at a Bicentennial Conference on Children and Youth, Early Childhood Conferences, and numerous regional conferences in which superintendents and central office personnel have been involved. The fit of Multiple Talents in almost any area of educational programming is phenomenal!

In addition to these activities, the MTA is having its run in the gifted/talented area. Almost every gifted unit in Alabama is using these talent processes, some more than others. My presentations at the conference of the Alabama Department of Elementary School Principals and the Alabama Association for Talented and Gifted both focused on multiple talent development. Also, a Leadership Institute for Gifted/Talented at the University of New Orleans last summer dealt heavily with the MTA. I am also serving as curriculum consultant to several federal projects on gifted/talented (three guesses as to the focus of my sessions).

The proposal for a teacher-training program in gifted/talented that I have developed (now awaiting approval) strongly focuses on development of competencies in the MTA. I consider this plan to be

a kind of major thrust for the future in terms of in-depth development of multiple talent teaching skills.

I think you know that last spring I continued my work with the European Council of International Schools by conducting a four-day workshop on the Multiple Talents in Florence, Italy. This spring I will be teaching a course for the University in the Panama Canal Zone, and a part of the course will focus on the MTA.

One other kind of "developing" use of the MTA that I see is with parents. I have been working with a local group of parents here on a continuing basis. I believe there are many opportunities in this area.

I have been keeping up with many of your activities through contact with Sara, whom I see rather frequently. I have to hand it to you, your persistence -- and success! -- is incredible. You did a GREAT thing when you conceptualized the MTA!

Minnesota Adopters of Talents Unlimited
Edward Schramm and Coleen Yatckoske
Milaca, Minnesota

Next are my chauffeurs from Minneapolis-St. Paul to Milaca and back (who also helped me get the story of Toynbee's life in the New York Times the week of his death).

I had a couple of interesting experiences at Milaca. They had a lot of parents, teachers, and administrators watching the students working in subgroups, with each subgroup designing a city. I suggested to the observers, "You can't see them if you're sitting down, so you need to stand up to watch." The adults didn't merely stand up in place to look. Instead, they came and leaned over the students shoulders and nosed in and looked. After a while one of the kids came over and said, "Can we design any kind of a city we want? Did you say we could do anything we want?" I said, "Yes, it's your city." So later I found out that his group then designed a "City Without Adults!"

After the students had performed several talent activities, I had them place themselves on six totem poles, and then place other persons, such as friends, brothers, sisters, etc., on the same totem poles too. One girl who had starred on the creativity activities had rated her mother as tops on academic and herself low but had switched these locations on creativity where she rated herself above her mother (who was in the audience). Coleen really got positively charged up about this girl's totem pole ratings of herself in relation to her mother.

Edward Schramm: We are going to tell you what steps we followed to get into the program. First, let me tell you about Milaca. It is in central Minnesota, about 60 miles northwest of Minneapolis-St. Paul. It's a rural community. We have talent

teaching in both the elementary (K-4) and the middle school (5-8). There are about 600 elementary students and about 650 middle school students. About 85% of our students are bussed, since we are in the rural area.

In October 1974 we first heard about the Talents Unlimited national project when we attended a facilitator project meeting. Minnesota is divided into three areas of the state with a facilitator assigned to each area for the national facilitator project. The meeting consisted of explaining the various projects which had been validated by the U. S. Office of Education. At that time we applied for funding from our facilitator project to go to visit Mobile. We didn't quite know what we were getting into, but we liked what we saw. We decided that it was time we did something to recognize those students whom we felt had not been recognized in areas other than academic. The project funded one of us to go and our district payed for two other people. Sara, I think I am correct in saying we were the first group? We were the guinea pigs and boy, did Sara lay it on us -- from early morning to late at night, but we really learned.

Sara: Do you know that the first grouu tore up the ecological balance?. Mobile has never been the same because of all the sand and all the shells and all the driftwood you took home?

S. Anyway we received a very full week of training. As soon as we got back to Minnesota we started discussing the program with our teachers and reviewing the copies of materials from Mobile. It was our first year at Middle school, and we had a lot of teachers who were already revising our entire curriculum. However, we thought it was a good time to integrate this whole project. We wanted to start from scratch and do exactly what Mobile did. We had no outside funding at this point. To begin with, we took all of Mobile's tests, the criterion reference tests, the Coopersmith self esteem, and our tests. This was necessary to establish base line data before the students were contaminated with any mention of talents at that stage. Some students thought we were nuts when they took some of the tests. But it gave us our base line data.

From that point we started having awareness workshops with our teachers, introducing the approach to them in that manner. For the summer of 1975, we convinced our board of education to hire Coleen and myself for six weeks to write materials that we could use that coming fall in order to in-service our teachers more completely and give materials to them to use in our program. We produced a book containing all the activities we used the first year for implementing Talents Unlimited. It is entitled, "Adviser-Advisee Homeroom Multiple Talent Activities Handbook" and is available from us for purchase.

At our middle school we have a homeroom set up for each day. Students stay in their home room for 25 minutes and each teacher serves as an advisor. There are students from all four grade levels

in the homeroom. We chose this approach rather than doing things in each of the academic classes -- we're all departmentalized. By utilizing the homerooms the teachers would then know that each student had received the same basic introduction to talents. We began the first month in September by having an in-service for the teachers on the first new talent, productive thinking. Then we handed out various productive thinking activities and the teachers went back to their homerooms and taught them to their homeroom students. Then every teacher knew that all students had received the same activities. They could fall back on those experiences and say "Remember in homeroom when we did such and such an activity?" This allowed them to always recall back to this particular activity. This approach proved valuable.

Now the teachers are writing their own activities, for warm up and motivational purposes, and can refer back to these activities that they knew every student had had. Each month they added on new talent activities in homeroom plus reviewing the old ones so that they kept refreshing their memory and comparing what the various activities were.

We should add that during that first year of the total program we did have Mobile people visit us. They presented a two day workshop for our teachers because it holds true that you are not an expert until you get at least 40 miles away from your home. That reinforced us and the program to have them come in. Also during the first year, Dr. Taylor came and spent a day with us.

We still do not have any outside funding, but fund it locally. We feel that this is a big plus by proving you can implement the talents without having outside funds. This funding question is a big concern of a lot of smaller schools in Minnesota. We are in a real financial crunch now, as a lot of states are, so we can prove to anyone that it is possible to use talents and to reap the tremendous benefits from them without having assistance from any outside federal or state funding sources. However, in order to complete the project because, as mentioned previously, it is hard to get teachers to work after hours to write material, we are applying for some outside funding.

Last year for the first time, Minnesota did set up special funds for replication. The state has set aside 10% of their federal grant monies to be used for replication of validated projects. We received \$9,795 to use for completing our replication of Talents Unlimited. We used this money last fall to hire the teachers to come in and attend a two day workshop at which time we reviewed everything again for them to make sure that there was no misunderstanding and then provided them with some writing time. By using their talent lessons they can start implementing talents into their academic classes, as well as using them in their homerooms. The talents are still used in the homerooms in addition to implementing them into the academic classes.

Last summer we conducted a ten day workshop through St. Cloud State University for anybody in the state. We had about 20 teachers from throughout the state who came. It was held at our school so that they could make use of our summer school students. After reviewing and teaching the talent program, they were able to go into our classrooms and observe our teachers activating talents in students. They then wrote their own talent activities and in turn taught them in our summer classroom. We were able to observe and critique them. This was a very valuable way to go. When they left, they had quite a stack of material to take back to their own school and were confident that they knew what was going on.

The students have also been anxious to share with their parents what has taken place, as far as talents were concerned. We did plot all of the first year testing (base line data) on the student profile charts. When we had our parent-student advisory conferences in the fall, the students shared this with their parents. They explained to them exactly what it was.

The parents were somewhat knowledgeable because we had already conducted some awareness workshops for them. Talents were also covered in our district newsletter. The students were able to show their parents where their strengths were. It was found that this is very exciting for students who ordinarily would have had very low progress reports as far as typical academic courses are concerned. When sharing their talent profile with their parents, they could show where they were really at with smiling faces on top and for once they had excelled in something. The parents were excited about this.

We do not use grades in our schools as far as ABC's or numerical, so we didn't have to worry about that, but students were still marked down because they hadn't progressed too well in academics. Through talents we could show success. At the end of last year we gave the post-test using Form B of Sara's test to every student again and then plotted this and found a significant gain in all five talents and also in the academic areas. We administered the Coopersmith again and also saw some gain there; not a whole lot, but we did see some gain in that area, too.

Originally we felt that after the second testing we would randomly test from then on. But now that this year we have implemented talents into academic classes, we want to test everybody again. All 1200-1400 students will be tested this spring and plotted so we can see exactly what the gain has been over a three year period. We do have a couple of other small handouts. They are not too professional, but again we don't have the money so we cannot prepare things professionally. But we brought some along so that you are welcome to pick those up if you'd like.

Coleen Yatckoske: Ed has given you briefly what we have done in the past two years in our school and how we have implemented

the talent program. We are having a lot of success and fun with the program and the kids are really enjoying it. I think that is something that needs to be brought up. We sometimes wonder where we are going with this besides checking those tests. Ed failed to tell you that they are hand corrected and I spent hours and hours scoring them.

Ed: She did the most and she wants to get this credit, so I'll give it to her.

S. I did the most and you know why? Because principals always have a way of getting out of it when it comes to checking tests. We have had three courses at St. Cloud State. They are back asking us to teach courses and get through to the teachers. We don't really know where we are going with this and how much more we are going to do. They are asking us to teach summer school courses as we did last year. It has been successful. The teachers are checking back and asking for more. I usually spend about six or seven nights a quarter over at the college as a consultant in different classes, telling them about the talent approach. So they are coming back requesting information. We really don't like giving out all of our information because we feel that unless they're trained, they can't really use it. So we just give them a philosophy of what it is all about as a consultant. But when we have the class, we train them in how to use the approach so we do have a lot of schools around our area that are starting to use it. I don't think there is a week that goes by when we don't have someone in our school or some letters requesting information of some kind about the program. It is interesting when you start working with this program with teachers from other districts and telling them what they can do and the success they can have in their own school.

Most generally these college courses are graduate classes. This is what came out of our last class in Foley. One teacher had spent many years in research as a statistician and came back later and told what she had done. Teachers sometimes come up with information that is quite startling. We felt this was something that was quite unusual. She had an activity that was done in productive thinking. A lot of us already vaguely know this, but this is what your teachers can reinforce. In this productive thinking activity she found out that the fastest or most fluent person in the class gave 50 responses using 24 categories. The slowest had 15 responses, but 12 categories and the average score was 30 responses with 18 categories. She wasn't just satisfied but analyzed her data further, saying that "I want to know how long it takes. We are talking about thinkers -- we're really developing thinkers." If it took the fastest person to come out with 50 responses in that time, it took 12 seconds per response. And it took the slowest 40 seconds to get one response and the average student 20 seconds. Then when you start switching to flexibility, she said on the average it takes 25 seconds for your most flexible person to switch to another category and 50

seconds for your slowest, least flexible person to switch to a different category and 33 seconds for the average person. This brief analysis really told her something. Teachers are not waiting for kids to respond. If you want them to think, teachers must wait long enough for the students to respond.

C. One of Bill Hutchinson's overall observations in his dissertation was that we move students too fast through the curriculum for them to make the knowledge their own and too fast (generally) for them to have time to think about it -- to be thinkers.

When I mixed my college students with 5th graders in a thinking activity, it was like your 50 responses with 24 categories for the 5th graders and only 15-30 responses for my college students. This means that I have to wait even that much longer for my college students to think and respond.

S. The point is, how many times do we, as teachers, ask a question and want the response immediately so that we are not giving them nearly enough time to think. She analyzed further. The percentage of answers that were in different categories was only 48% for the fastest and 80% for the slowest one, with the average being 60%. So who came out with the most original, creative responses? Looking superficially you would think that the fastest most generally is the most creative. But in this case that is not true. It may be that your slowest, who is sitting back and not always coming up rapidly with the answers and the responses, who can be one of your most creative persons -- at least he may be switching categories more often per response and thus be more flexible per response.

Information like this from your teachers or from your own classes makes you feel pretty good. They're finding out some revealing things that really can have an effect back into the classroom.

Last summer we had the workshop for our teachers including the theory. Writing was a portion of that, but there wasn't enough writing. It was possible to add a writing workshop with the college, so that our teachers were able to leave the workshop and go on writing the talent activities and get three graduate credits for this. I don't know how many activities we will have when 75 teachers are writing activities. This year we are doing the very same thing that some of you are: Categorizing them into areas of science, social studies, and so on. We will be developing these activities into a resource file ready for use in all curriculum areas.

C. Will they be available then to buy?

S. As yet, we don't know how to handle this. We're just learning about some of these things but we think possibly we have to go through the teachers on this point. Can we sell their materials?

They did write them for academic credit during the course. Now that we are done with the course, they are still writing activities for us. By the end of March we'll have 2,000 lesson plans in all academic areas.

We are talking and wondering about what is going to happen in the future in our schools. We are constantly growing or hopefully growing. Many, many parents are interested in this, so we have started developing activities for parents. We are going to have courses for the parents because they want to find out what is going on. Some of them work on our advising counsels and so on. But we want to structure a course for parents that can develop into something that will be useful to them.

I am also involved as a reading specialist in our school and with the state Adult Basic Education program. The state has asked me to write lessons, such as Multiple Talent lessons for reading, and so on. These would be work-a-day activities for those who work in the adult basic program that they can take home and use. I haven't started anything like this yet, because I don't have the time. But I hope that maybe I can find someone else or some way to get this done.

When I get home from this meeting, I will leave for Bemidji to speak to the secondary reading counsel, at the University there, telling them how they can implement multiple talents into the reading program. I'm looking forward to that day. I'm so glad and I think that it's a never ending job. This spring we will also be presenting Talent Awareness workshops in Crookston, Duluth, and Grand Rapids in Northern Minnesota plus summer school sessions at St. Cloud University again. Many people have shown a great interest and are asking for workshops.

To summarize for our own schools, focusing on talents certainly has been successful with our students. Each day it gets better.

Milaca's Visit to the Holladay Elementary School, Granite School District

Darrell Johnson was very gracious and gave a good overview of his school. Then we visited with Beverly Richards and Ellen Johnson Williams. Both were very good, of course. Ellen demonstrated a convergent thinking activity. It was interesting. Children were experiencing success. We were most impressed with watching her demonstrate a structured class, yet with an atmosphere of freedom to diverge into individual application.

Milaca's Visit to the Indian Hills Elementary School, Salt Lake City School District

We met with Robyn Smith. The atmosphere was very warm and congenial in her classroom. She was very explicit in describing

her program. She was a capable, dedicated young teacher who knew what was going on. She firmly believed in the philosophy of talents and could defend it. We watched children working in her classroom which reinforced her beliefs. We were very satisfied with her approach and philosophy. She demonstrated well and impressed us.

Talents Unlimited Texas Style
Anna Brodie and Ruth Foegelle
Temple, Texas

S. Talents Unlimited has been introduced into many different areas of our state of Texas through a variety of experiences Ruth and I have enjoyed very much. We have with us a marked map of our state to help you understand just how much we have traveled, doing overviews of the program, presenting the awareness sessions, and expressing our pleasures about results we have experienced in our schools. As instructional leaders on our campuses, we have found a kind of reinforcement through in-service operations in Temple Independent School District as well as opportunities to provide the same to other school districts within the state.

Texas has twenty Education Service Centers located in various geographic regions of the state to serve the school districts in those regions. Each center has a facilitator for Exemplary Programs. Mrs. Della Whatley, our Region 12 facilitator, made available to all of the Temple Administrators a list and summary of programs which we might explore. These programs were screened with the idea of review and evaluation as to individual campus needs. Ruth and I felt we wanted a program which would enhance the curriculum we had in progress, yet one to enrich and expand the creative abilities of our students. We could see the need for such opportunities in our school district and therefore stated our preference to the Services Center Staff.

After being notified that our choice of Talents Unlimited had been approved, Mrs. Whatley and I were invited to Mobile, Alabama for a most intensive five day training session with Sara Waldrop and her staff. We were a part of the first group to be trained and quickly found just how creative we really were! The week was delightful for we spent our concentrated efforts on all facets of the program: program rationale, teacher behaviors, talent areas and activities of each, testing samples, climate control, etc.

On our return, the faculty of Freeman Heights Elementary School joined our Cater Faculty for our local training session. We also developed an overview of the program which we presented to our school board. This presentation included objectives, goals for our campus, materials, training procedures, and detailed information concerning the measurements and evaluations planned for student achievements. The Temple School Board accepted the

program for our schools, were delighted we were so enthusiastic about his new approach, and gave us their full support to go ahead with the training and implementation as we desired.

Students from these two elementary schools varied in socioeconomic backgrounds, academic enrichment due to home environment, and cultural differences. We felt this contrast presented an interesting and challenging project for the program.

Temple Independent School District has been under a court order for several years; therefore the Talents Unlimited Program has been used with all children with no selection, screening, etc., for special resources room placement. We knew we couldn't track students or pull certain children from classes for a "talent room" approach, as some of you can do within your school programs. We also knew we had to evaluate academic participation very carefully showing that all students were afforded equal opportunities to exposure. These contingencies are always with us as we work. After hearing those of you from other states review how your programs are established, we realize that our program lacks that flexibility which permits greater measurement of exceptional growth gains as to class averages, individual scores, etc.

After we were assigned in-service dates to use for training, we went into our extensive training programs. The teachers were trained in a behavior from start to finish and then instructed to return to the classroom for activities, testing, and evaluation. We would then review that behavior at the start of the next training session, answering questions on scoring, procedures, etc., or giving additional information to ensure better understanding after the actual "on site experience." By having the teachers train and then go into the classroom for student contact, we found that the teachers better understood the activities and the testing procedures and were then able to extend their practices more successfully into the developing of their own lesson plans.

A "Make and Take" workshop was also included in our training schedule so that bulletin boards, center activities, games, audio-visual experiences, etc., could be constructed.

Each involved school displays and shared their talent activity projects at PTA and PTO meetings, constantly providing parents with information and results of the program as the children entered each phase. Also Parent Activity Handbooks were distributed so that activities based on the program behaviors could be used at home.

Soon we were being invited to do presentations on Talents Unlimited throughout the state, including the Texas Association of Curriculum Development in Houston, "Promises in Education" sponsored by the 20 Regional Education Service Centers and the Texas Education Agency at Austin, Texas Association of School

Administrators and Texas School Board Association Conference in San Antonio, Texas Elementary Principals Association, various Educational Service Center workshops, and individual school districts. We have organized and conducted our own one week workshop in Temple with some thirty-five participating.

The second year of the program, Ruth continued to work with the two school faculties and I (Anna) moved into the new middle school program starting that year. Meredith Elementary joined the elementary training program and we began training the three middle school faculties. Each middle school had been represented by a teacher at our summer workshop and had been through the training program.

Some of the Mobile team visited our program and gave us outstanding evaluations the first year. They were very surprised that we had made such progress in such a short time. Ruth, being a teaching principal, was involved not only in training but also in inspiring her students in their use of the program. The second visit by another member of the Mobile team was an expanding of the program, for we were introduced to the new middle school units and given ideas for motivational representations.

When last spring's survey was run in math and some fourteen elementary schools were rated, Cater was first and Freeman Heights was second. We felt this indicated a great deal of what the multiple talent approach to teaching had done to enrich the traditional academic areas.

Talent Teaching has become a new way of life in Temple Independent School District from K-8. Teachers have internalized the processes and have found new and exciting experiences to share with their youngsters as a result of this approach to learning. We have gained a great deal of satisfaction, not only from this new and exciting approach but also from the opportunity of sharing our successes with others throughout the state of Texas.

In retrospect, the conference was great. It was a fantastic opportunity to have such a rich and full experience through meeting and sharing thinking with all the multiple talent teachers. A Texan could easily fill the page with adjectives to compliment the conference and its success.

The selected topics on Talent-Focused Education, the contributions of the entire group, and the "sharing and caring" of ideas gave many of us the boost and reassurance we needed concerning our involvement in the Multiple Talent Approach to Teaching through the Talents Unlimited Process.

Since we returned from Salt Lake, we have given a two day workshop in Cypress-Fairbanks, a school district very near Houston, and are preparing to present this week at the "Promises in Education" conference in Austin. This conference will include

representatives from all of the twenty regional educational service centers in the state. Next month is the National Elementary and Middle School conference in Las Vegas where we will be presenting the Talents Unlimited Program at two group sessions of elementary and middle school interest groups. This summer we will again have a week long workshop to train teachers here and will also present at the summer workshop for the Secondary Administrators. Later in the summer, another presentation will be given to the Texas Elementary Principals at their workshop.

We just can't believe how this entire program has mounted. Yet now it is more understandable after having had the unique opportunity of searching for and becoming acquainted with the underlying research, the thinking, and the development of this approach, we can realize how this explosive trend got started.

Texans' Visit to Holladay Elementary School, Granite District

This visit was very interesting to me for we watched a teacher, Ellen Johnson Williams, work with youngsters in the technique of math content. Others in the classroom were busy with activities based on the approach of the program. The teacher's technique was very good and seemed to develop in the student the motivation to respond.

The information about the program and the background of the program at Holladay was given to me by another teacher. Having the opportunity to look around the building and visit with the teachers in an informal atmosphere gave me the impression that the staff could generally see that this program was of benefit to the students and the staff development program.

I would have liked to have had the opportunity to visit the entire program for a day and observe the various levels in math to see the continuation of the techniques across grade levels. Anna Brodie.

The teacher, Ellen J. Williams, was conducting a math class with a group of approximately ten 5th grade children while others were functioning in various high interest centers. The class was rather structured, well organized, and the students seemed well directed toward their activities. This teacher seemed very capable, and one who could and would adapt to most any given situation.

This young lady, Beverly Richards, seemed to be one who plans and is therefore very capable. The Kindergarten children were able to respond creatively following a recording. Their attention span and listening habits were well developed. The teacher accepted each child as an individual, and, as a result, accepted their unusual and different responses. This in turn encouraged the children. Ruth Foegelle.

Texans' Visit to Indian Hills Elementary School, Salt Lake District

We arrived at Indian Hills and were guided to the Resource Room which is the location for the activities used with the youngsters in the Multiple Talent program on this site. Robyn Smith was the teacher in the room and greeted us with a gracious smile. Youngsters were in the room using the reading-for-fun facilities. She checked their condition and activities, and then invited us to join her for discussion.

The room was beautiful in that all types of color, design, and stimulation were collectively used for interest and motivation. The supply of equipment and teacher-made resources was most impressive. The "Climate Control" was indeed at work for an environment conducive for exploration and expression. Many visual representations of the talent activities were available.

We sat for a great deal of time, visiting about the program, the structure in the room, and the overall mechanics of moving children in and out of the program. Robyn was very helpful to me, for I could see the relationship of the "resource room approach" to the talent teaching strategy in comparison to the total student involvement approach that we have been using in our schools.

After talking with Robyn, I came away with a feeling that one of the concerns she has is that of selecting out the students. The process of class placement, just as we have experienced in any special program throughout, continues to pressure the person doing the selection. When asked if she liked the manner in which students were selected, she replied that she would enjoy working more with all of the students. Some of the teachers work with the program and with her to enhance what she does, yet many students are not exposed to the program techniques and processes. The great expectations of the parents in this school community seemed to concern the manner in which many of her techniques were geared.

In conclusion, I felt that this situation was an excellent example to me of the designated "Talent/Gifted" resource stimulation and found it most interesting and enriching. The teacher was very devoted to her work and to the betterment of her program objectives. Anna Brodie.

This school is very attractive and interesting. We were welcomed into the Resource Room by the very attractive young teacher. She discussed her classes of gifted children. We discussed student placement, parent attitudes, student feelings, enrichment, and multiple approach to teaching. All questions were answered directly and with support.

Her classroom was one that would lend itself to academic enrichment. I feel that more talent development might be encouraged. Ruth Foegelle.

Luncheon at the Granite School District Cafeteria

We can't pass up this chance to say how very delighted we were with the facilities of this site. We were impressed with the supervision and guidance of the handicapped children. The planning, preparation, and serving of the food by the handicapped children could be accomplished only through special supervision and guidance.

The tour of the facility was most appreciated, for I could recognize that these special youngsters were being given opportunities for exploration of their talents as well. The atmosphere was so friendly and relaxed. We were most impressed by the attitude of those young people coming in to seek assignments and those assisting to make us comfortable and secure.

How can we separate learning from living and relating to others? These young people were indeed exhibiting their abilities to gain some training and processing their area of talent by just functioning for the good of others and for the good of self improvement.

Thank you for enabling us to have this experience.

Illinois Adopters
Joan Bertram
Peotone, Illinois

S. The Kankakee-Will County gifted cooperative is composed of nine school districts with its administration office located at 114 North Second Street, Peotone, Illinois. The K-W Gifted Cooperative members include Beecher District 200-U, Channahon District 17-C, Laraway District 70-C, Manteno District 5, Peotone District 207-U, Rockdale District 84 and Wilmington District 209-U. Troy District 30-C and Union District 81-C have developed individual gifted programs.

The main emphasis this year is on identifying, developing, and nurturing leadership talent skills. The identification process for determining outstanding leadership abilities will include several instruments which will be administered by the classroom teachers participating in each local school program. A check list for Identifying Multiple Talent is completed for each student and percentile scores are recorded from district administered achievement tests. The planning, forecasting and decision making tests from the Criterion Reference Test Battery, a component of the Talents Unlimited program, are administered to all students in the classroom. Students identified with outstanding Leadership abilities score high in two out of the three tests measuring planning, forecasting, and decision making talents. In addition, students must score in the top 10% of their class as measured by achievement and teacher observation scores.

A minimum of one talent lesson a week is taught to the identified talented student in Leadership either individually or in a small group. In addition, a talent center in the classroom has been developed which contains Leadership Talent Packets and other material designed to challenge the student with exceptional abilities. Students are encouraged to work in the center when their regular school work is completed.

After the initial pre-testing is conducted in September, written evaluations are completed on each student three times a year. Regular evaluation occurs in December, March, and May of the school year along with post-testing which is conducted in May.

Our program is an adoption of the nationally validated Talents Unlimited program utilizing the testing and written Talent lesson components as a structure and framework for a highly successful gifted program. The program should be of interest to administrators, teachers, and parents. Luceille Werner, Project Director and Joan Bertram, Project Consultant will be the presenters. All correspondence should be directed to the Curriculum Service Office, 114 North Second Street, Peotone, Illinois 60468.

Most of these school districts have been involved with gifted programs in varying degrees for several years. However, some of these programs had been implemented on a district wide basis. As a result, very little correlation between teachers and students in various buildings existed before 1975.

Our first introduction to the multiple talent approach to teaching came through exposure to the Talents Unlimited Program in August of 1975. As a member of the National Diffusion Network through our association with the Early Prevention of School Failure program, we became interested in adapting the Talents Unlimited program for use in strengthening our local gifted program.

With the support of local superintendents, Mrs. Luceille Werner and Joan Bertram participated in the Leadership Training Session at Mobile, Alabama under the tutelage of Mrs. Sara Waldrop and other staff members. With official endorsement from the Talents Unlimited staff to become turn-key trainers, Mrs. Werner and Mrs. Bertram returned to Illinois and began Inservice training for local teachers selected by each district superintendent.

During the first year a total of eight inservice workshops were conducted for the purpose of training teachers in the talent areas of Productive Thinking, Planning, and Communication. The rationale behind this inservice training schedule was to give teachers support throughout the year by priority inservice training at one month intervals and in doing so, ensure certain measures of accountability. Mrs. Sara Waldrop who served as consultant flew to Illinois in March of 1976 to observe the teachers and approve the program. In addition, the twelve parti-

cipating talent teachers made presentations at the Will County Teacher's Institutes held in January and March of that year.

The Talent teachers were encouraged to develop original lesson plans based on their own curriculum needs. Two Talent Activity Guides were developed in both a primary and intermediate editions containing all of the original lesson plans written by local teachers during the year. These guides are available for purchase at \$5.00 each. In addition, three new guides including for junior high will be available in the near future at the same cost. A talent center was also developed in each classroom containing additional talent activities for use by the students who were identified with exceptional ability in specific talent areas. A minimum of one talent lesson was developed each week and taught to the students in the classroom.

For evaluation purposes, the Criterion Reference Tests were used and additional instruments were added to meet the Illinois State Gifted Guidelines since this was our source of funding.

In July 1976, we received a diffusion grant from the Illinois Office of Education, Title IV ESEA, Part C to train ten school districts as official adapters of the Talents Unlimited program. We participated in a research design and have statistics on file to support the statement that talent teaching influences academic achievement and self concept development.

Currently, we are involved with the Talents Unlimited program through an Illinois Office of Education diffusion grant Title IV ESEA, Part C and are working with 25 school districts throughout Illinois. On the local level in compliance with the Illinois State Gifted Guidelines, our main emphasis is on identifying, developing, and nurturing leadership talent skills.

In addition to the highly specialized talent development program for the exceptionally talented in leadership ability, the classroom teacher will continue to use the multiple talent approach with the entire class as has been done in the past. The multiple talent approach is appropriate for all students and all can benefit from it. The accelerated dimension merely enriches an already highly successful program and offers us the flexibility within a structured framework to meet the needs of all students.

C. One feature of Project IMPACT has been to expose the program to teachers for six weeks during the summer. Does your program make similar accommodations for inservice training?

S. This is an interesting idea and one which we feel for merit. We intend to conduct our initial leadership training workshops during July and August next year. This should facilitate the implementation stage of the program by familiarizing the teachers with the program earlier in the school year.

C. As far as inservice training is concerned, what are the minimum requirements for which teachers are responsible?

S. All teachers participate in the pre-post evaluation, develop and write a minimum of one original talent lesson each week, and develop and equip talent centers in the classroom.

C. Once the teachers are trained, what percentage do you find stick with the usage of these materials after training?

S. On the local level we have found that success rate of the teachers utilizing the program for the 2nd and 3rd year correlates to a significant extent with the support given to the program by district administration. In addition, teacher attitude can not be underestimated. In the only school where the program has lost some of its initial enthusiasm, negative factors were lack of administration support and teacher attitude. In like context, the most successful talents programs seem to be in schools with enthusiastic teachers and administrators. Perhaps through a more careful selection of staff participating in the program, and a more thorough process of needs assessment at the administrative level, the percentage of program failures would decrease. Nevertheless, there will always be a small number of teachers who will discontinue any program regardless of the reason, and I feel that this is unavoidable.

C. Is your program associated with the Illinois Regional Gifted Area Service Centers?

S. Yes, our Regional Gifted Area Service Center is located at Governors State University in Park Forest South. Since we are only 10 miles from the center, we have a good opportunity to work together in providing additional workshop materials and ideas for our local teachers. This year we will be interested in parental involvement and workshops which will be conducted specifically for parents of talented students. It is our hope that parents will become involved in learning more about the multiple talent approach and what they can do at home to nurture and develop these talents.

PROJECT REACH

Joyce Juntune
Pike Lake Elementary School
New Brighton, Minnesota

Joyce, maybe you should tell us who you saw first and who helped you get your proposal going, some Utahns as I recall, among others. Secondly, your principal, Harry Branes, was always a supportive leader, while preferring to appear to be in the background. I saw both of you a couple of months ago in Kansas City but since then, unfortunately, he passed away.

S. I have often said when lecturing, what a key the principal was in doing anything. Harry was a blessing to us all along. He was always bringing in the right people to talk to us, even before we thought about funding. He did this to get us thinking in the right ways. He brought in Beverly Lloyd and JoAnn Seghini and took us to Mobile, etc. We had three years of work before we received any outside funding. He was so enthused about the funding and with us in general and was always helpful and supportive. He had just said to me in the middle of November, "You know, Joyce, our funding is running out in June; but this is going to go on and I'm going to see that it does." Unfortunately, he died of a heart attack just before Thanksgiving. In January, a new principal was assigned. So, we're at a t osy point now, not knowing what is going to happen. We've lost Harry's support which we have felt to be very crucial. We are now challenged with what we are going to do for the project.

Our financing gave us a greater opportunity for in-service with our teachers. Our program research involved eight people: Williams, Taylor, Torrance, Khatena, Gowan, Parnes, Land, and Guilford (Meeker). We are constantly doing what we call "growing." We offer credit courses for our teachers after school so they might have continual growth. We also have the problem of great turnover due to teacher moving and leaving. It's difficult when you have to re-inservice the teachers who come in. But it also has a plus -- there we go, spreading it around the world -- because as each one moves, they take with them what it was that they learned while they were with us.

We've done a lot of curriculum writing and to date we have published guides incorporating multiple talents into the curriculum of math, social studies, reading, language arts, special areas, and one for centers. With our evaluation, we have used the tests that TALENTS UNLIMITED, Mobile, developed and Torrance's tests of creative thinking. To look at more specific types of findings, we use Dr. Meeker's Learning Abilities Test. These are the things with which we are working. Of course, we were delighted, when on our last evaluation, our control score went just like it was supposed to do. This was both interesting and insightful for the people in our district to see.

We have found that these thinking processes form a framework for thinking through all kinds of problems faced by parents, students, teachers, etc. For example, one junior high school used this framework to work on integration problems facing their teachers and students.

We've been doing a lot of work with parents. We've offered them courses. We've written booklets. They've been volunteers. We have found this to be very advantageous.

I'll never forget the time that Dr. Taylor turned to one of our students and asked, "Who's the smartest person in your class?" And bless the student who turned to him and said, "Smart in what, Dr. Taylor?" And he replied, "What do you mean?" And the student answered, "Well, we have people who are smart in decision-making, etc. What do you want, Dr. Taylor?" This was a real pleasure to me.

From our parent training, we have had repercussions from their employers. We trained parents in what they could do at home with their kids and they decided to take it to work. The companies started to give feedback to us -- good and bad, of course.

C. I remember a few other things, like the student who wanted me to write a word on the board which turned out to be Supercalifragilisticexpialidocias. You certainly laughed at the way I abbreviated it. Also I saw and heard you give a speech in Kansas City. This is a compliment: you surprised me by double-talking the entire time during your speech -- I mean you were effectively gesturing full-time with both hands while talking rapidly and lively -- and it all came out extremely well. We appreciate what you are doing and wish you continued progress in the years ahead.

S. Our most impressive research results provide another example of multiple talent teaching paying off with very positive accountable results across all measures used. A total of 161 of 186 comparisons were significantly in favor (mostly at the .001 level) of the experimental talent school (the remainder being ties).

At the project's beginning the experimental and control schools were fairly similar. However, after three years across grades 3 to 6 on 19 creativity and multiple talent tests, 67 out of the 70 comparisons were clearly in favor of the talent-focused experimental school.

Across the three year period, 48 of the 53 performances by the talent-trained students showed significant improvement. In these students a combination of growth both from the project's effects and from maturation effects occurred in 12 of the 15 comparisons and positive cumulative project effects occurred in all 15 comparisons. In summary, talent-focused teaching yields new phenomena consisting of expanded growth experiences and other improvements over the phenomena in typical classrooms. It thereby provides a superior education for students.

ELEVEN MULTIPLE TALENT ELEMENTARY SCHOOLS

Betty Thomas
Salt Lake City School District
Salt Lake City, Utah

Let me comment first about the Salt Lake City School District. I visited a previous superintendent there because of some signals I was getting from certain teachers in the district who had taken workshops from me. That superintendent indicated there were two important kinds of things to keep in balance in schools, namely tradition and innovation. The teachers had been saying to me that their system has been almost completely tuned in just to tradition, in spite of pronouncements to the contrary.

The current superintendent, Donald Thomas who had been in Illinois before being in California before coming here, fortunately was very available to visitors. I dropped in and chatted with him about talents and gifts, talent-focused education, multiple talents, and so on. He said he wanted to start something in the district for the gifted. I urged him not to stay with merely one kind of gift or talent but to move ahead to multiple talents. I've talked to him many times since, and he went with us to our Hawaiian workshop one summer.

Also I've helped on workshops and especially worked with one of their schools, Indian Hills. This was from parent pressure who wanted us to work there. When I talked to the principal about their new multiple talent classroom, he said that when they brought in a special teacher in the reading problem area, the kids dragged down the hall slowly and didn't want to get pulled out of class for what was a demeaning experience to them. But he said that kids are now running down the hall to the new multiple talent classroom. My immediate comment was that this speed was an objective measure of accountability. Then I added that his school had a problem unless the students go the same speed back to their regular classrooms.

He said that he could not yet report this talent program to the parents because he could not tell them that he had a good, special program for only so small a percentage of their children. So in a workshop we tried to let the other teachers know what was happening in this special classroom and how to run their classrooms in multiple talents ways for all students. Thus, in a sense we ran a training program to help him put the school back together before any major split truly occurred.

S. When Superintendent Donald Thomas came into Salt Lake District, one of his first actions was to request the implementation of a program for education of gifted students. The Multiple Talent Project was started by placing a resource teacher in each of seven schools. The teachers and principals of these schools attended an in-service class in the theory of multiple talents and ways to

develop such talents in students. The class was conducted by Gilbert Stevenson and JoAnn Seghini of Jordan District who had so successfully developed a multiple talent program at Bella Vista School. We followed this intensive workshop with about three monthly meetings in the second half of the year. Each teacher, then, was organizing and carrying out a multiple talent program as a resource to an entire elementary school at the same time she was learning how to do it. It gave the multiple talent teachers an opportunity for practical experience and on-the-job training. The principals who were very supportive also were able to learn about a new program for gifted at the same time that it was put into practice.

Briefly the structure of the program was that the multiple talent resource teacher was responsible for making talent teaching methods and activities available to the whole school. That's a big order but the teachers did a remarkably good job that first year. Several patterns were developed by different teachers to implement the program. For example, as some multiple talent teachers became familiar with teaching techniques to develop productive thinking, they would share these with any regular classroom teacher who wanted to take part. They could share materials, do demonstrations in the classroom, or help the regular teacher plan a unit and then help to teach it.

A second pattern which emerged in the program consisted of resource classes for a selected group of students. The students could be chosen according to any of numerous criteria. The teachers had the responsibility of deciding how to do this according to selection guidelines we developed. We were studying the talent totem poles and characteristics of gifted students in our in-service class, so teachers were learning to broaden their perspectives and not confine themselves to the narrow view that students who were already doing well in academics were the only gifted ones in the school. It was expected that resource classes would be a more extensive experience for students and promote some consistency in development. They were conducted in many diverse subject areas. The advanced production in academic areas such as creative or journalistic writing or the study of advanced math concepts and problems took place in resource classes.

Another activity by some multiple talent teachers was to develop a series of mini-courses in which all the students in a designated grade level could participate. These classes usually met one hour a week for four to six weeks. The objective was to give students a chance to experience as many different activities as possible in a non-evaluative situation. The regular classroom teachers helped with this. For example, when the sixth graders were involved in mini-courses, their sixth grade teachers were asked to teach a little course in anything they liked. Many had interesting hobbies they shared with children. Sometimes the principal would also teach something such as chess, and the school secretary might teach filing or letter writing. The custodian

might teach woodworking. In addition the PTA would help us locate parents in the local community who had special skills they could share with children. We also had a person to find people from the larger community who could act as mentors. Students at the University who could teach ballet or weaving or chemistry, or someone from the local Sheriff's office who could teach a class in law and order are examples. The mini-courses included such different projects as organic cooking, pioneer architecture, Asiatic languages, Morse code, girls' track, and all kinds of crafts. Young students who in some cases had limited experiences had the opportunity of sampling many different fields of knowledge.

Some teachers, instead of having mini-courses, conducted exploratoriums where a variety of different activities and interest centers were available in the resource classroom. The students could go to the multiple talent room at recess and before and after school to try things in the exploratorium. The multiple talent teachers also could assist students to conduct their own individual research projects by providing materials and guiding the student in gathering and using information.

The multiple talent program was parallel in design to the Re-Ed Program for helping students with learning problems. By focusing on multiple talents we were able to offer resources to the whole school. It was possible for some students to be in both programs, in Re-Ed for help with learning disabilities and in multiple talents because they also had strengths which could be used for creative production. For example, one third grade student was having trouble with reading because of a disability but at the same time he was able to think well and possessed a large vocabulary. He was able to write a beautiful article for the school newspaper through dictation.

It is somewhat difficult to objectively test a resource program of such wide ranging activities. For evaluation we developed a form for counting the products of the program. This included the number of students in various phases and the length of time they were involved, the number and types of resource and mini classes, field trips, student activities such as plays, newspapers and literary productions, student governments, science fairs, and activities in the arts. The teachers were also involved in the regular District accountability program where they reviewed the use of their time with their individual principals.

The multiple talent program was financed the first two years entirely by district funds. The Board of Education made a large commitment to education for the gifted when they placed extra teachers in the elementary schools to be responsible for this program. In the third year the program was expanded to eleven schools as categorical funds were received from the state for gifted education. More money will need to be found if the District elects to expand the program further in coming years.

Some of the projects that remain for the future include the development of curriculum guides and of effective measuring instruments to be used for further evaluation. There will always be the problem of adequate communication both within and outside the profession. We want to let others know what we are doing and why.

C. Do you bus the kids to another school to make up a class?

S. No. This is a resource program within the school to make multiple talent teaching activities available to all the kids within that school. We don't reach out beyond the school. I get a lot of calls from parents who want their children in that program and if they desire, we say we can transfer their child to the school which has the program.

The resource teacher in the school is assigned a separate classroom. She selects children from the regular classrooms to come to her room for special classes. The resource classes could meet every day or they could meet three times a week for three months. The arrangement is flexible. We've given our teachers a lot of latitude to develop a program within our guidelines to meet the unique needs of her school, and of her own teaching personality.

C. What is your method of screening to determine who goes in and who goes out?

S. We are, as I said, on the multiple talent philosophy. After our first year we held a workshop and we wrote a manual as a guideline to our program. We put together in this manual a list of the characteristics of creative children. We've also provided our teachers with some other instruments. Everybody knows who's doing well in academics in the school. That information is available from the regular program. Other selection methods include creativity tests, interest inventories, and sociograms.

C. Who does the selection, the resource teacher or your other teachers?

S. The resource teacher. We do have what we call a pupil specialist who is in charge of all of these auxiliary programs in the school, such as the program for learning disabilities and the program for multiple talents. The pupil specialist, the principal, and the classroom teachers may be involved. The child can nominate himself for a program. The teacher, the parent, or the principal can also suggest candidates. It will depend on the purpose for which the resource class is organized.

C. And then the resource teacher makes the final selection?

S. Yes, the resource teacher has the final selection and responsibility.

C. Is your state funding in Utah based on your exceptional children classification including the talented/gifted plus your plan A special education or your handicapped? How is that? Do you divide them up in different divisions?

Colleen Taft: Our Utah state funding for Gifted/Talented is not tied in with special education. Ours is called Gifted and Talented money and it's put in a categorical line item which means that this money cannot be used for any other thing. We had to protect that. This year some legislators are really against categorical money, so this is something we're going to have to be looking at and watching the next year or two. In our handicapped legislation we have the whole spectrum of the exceptional child. Gifted is included in there but there is not anything for it as yet, money-wise. Actually specifically for Gifted and Talented we started out requesting the ball park figure of \$500,000. That's customary in this state and we were backed \$137,000 our first year. It's an arbitrary amount. Almost at a whim of enough legislators it could be wiped out. We were concerned again but \$317,000 has been appropriated for next year (1977-78) to serve the entire state, with none of these funds whatsoever staying at the state office level.

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With increased support from both the district and the state, there are 18 multiple talent elementary schools functioning in the Salt Lake District during the 1977-78 school year.

A TEACHER CORPS PROJECT ON MULTIPLE TALENTS

Jerome Hainsworth
Murray State University
Murray, Kentucky

One reason we are here is because Jerome Hainsworth called for this type of a national session where we could share ideas. He also has some roots here and a couple of children in college in this region which makes it enjoyable for him to travel from Kentucky to Utah. Jay comes as the Director of the Murray State University Teacher Corps Project and former Assistant Dean in a broadly conceived college of Human Development and Learning. It has about as wide a coverage as I have seen, including education, psychology, special education, social work, nursing, and so on. They have a very alert Dean, who has created a Center for Innovation and Development which is doing all kinds of things, both on and off campus. Jay Hainsworth is manning and overseeing the Teacher Corps Project, and has it going in Hopkinsville, Kentucky. We are pleased to have Jay and others he brought with him from both Murray State University and Hopkinsville Middle School with us.

S. Part of our Teacher Corps Project requirement is dissemination, so we are claiming this presentation as part of our fulfilling of that requirement. We wrote a Teacher Corps grant for the Hopkinsville Middle School as a demonstration school. We've been at the demonstration school now for one and one-half years of a two year grant period. Our total funding for the two year period is \$419,000.00. The main thrust of the Project is the idea that "Every Child is Gifted," and we are trying to identify and maximize the talents within each child in the middle school. However, the total project has other components such as community involvement, intern training, and faculty renewal.

Frankly, when I wrote the proposal, I knew very little about Cal Taylor, Bella Vista, Jordan, Mobile, or any of these other districts or programs represented here today. One thing I did know -- as a graduate at B.Y.U. -- one of my friends had heard Cal Taylor talk and he was impressed. So what I did was in the bibliography of writing the proposal, I included a two page UEA report -- "Nearly all students are talented ... Let's reach them" -- that Dr. Taylor had written. I did phone him and asked him in case we were funded would he come out and help us get started and he said yes. We were funded, so my next step was to contact Dr. Taylor. At any rate, this is the way we got started in multi-talent teaching.

When I came out here to bring my children to school, I made a personal visit to Dr. Taylor's office and had a chance to talk. I made arrangements with him to come to Kentucky to conduct a workshop. I also had a chance to work with some of the schools here. This helped us a great deal in getting started. I guess this is part of the theme of this conference on the historical sequence of how this

thing starts and spreads. The contact with the Jordan District and the pioneer work they did in the multi-talent area of lesson planning and identifying teaching strategies related to talents was most valuable to us as a new project. In fact, I was so impressed that I arranged to have the principal of the Teacher Corps demonstration school, Mr. Wood, and the Teacher Corps team leader, Mr. Wilson, visit the Jordan system. Later we had Beverly Lloyd and JoAnn Seghini come to Kentucky. We were able, through the grant, to bring in other people who helped us with management systems, community involvement, and other phases of the project, as well as the multiple talent focus.

Under the Teacher Corps grant we were funded in a category that is called "the adaptation of basic research." We are not doing basic research. However, we are adapting or trying to adapt the findings of basic research. I think this is very important because we really haven't done enough of that type of thing in education. To help us with this adaptation of basic research we are using Bob Ellison, who most of you know and who is here today, as a consultant through the Institute for Behavioral Research in Creativity. Bob and the Institute staff are doing the testing for us.

As I have just stated, the Murray State University/Hopkinsville Middle School Project was funded under the research adaptation framework and is based on the research done by Guilford, Taylor, Bloom, and others which states that almost all children have some unique talent of a high order that can be developed if we had instruments to identify these talents. The goal of our project is to see if children from all social and economic backgrounds (Teacher Corps' special mandate is to find ways to educate socially and economically deprived children) can be found to have some unique talent and then maximize that talent in a middle school setting. I would like to show some of the results that we have come up with which are very impressive.

We tested 1,254 students in the demonstration school, obtaining a set of ten talent scores on each student. These included the six scores from the Form U Biographical Inventory (Academic Performance, Artistic Potential, Leadership, Creativity, Career Awareness and Exploration, and Educational Orientation versus Dropout Potential) and four additional scores from aptitude-like tests entitled Realistic Decision-Making, Remote Forecasting, Planning, and Non-Verbal Originality. Of this group, ninety-one percent of the seventh and eighth grade students scored at the fiftieth percentile rank or above in at least one of the ten different talent areas tested in our project. Seventy-four percent of the students scored at the seventy-fifth percentile, and forty-seven percent of the students scored at the ninetieth percentile in at least one of the ten talent areas tested. What this means is that almost all students at the demonstration school have at least one talent area in which they have the potential to do very well. Table 7 that follows highlights this potential in the students that we tested.

Table 7

Percentage of Students (N=1,254) With Scores
Exceeding Specific Percentiles

Above Specific Percentiles On ...	50th Percentile	75th Percentile	90th Percentile
1 or more scores	91%	74%	47%
2 or more scores	82	49	22
3 or more scores	70	35	11
4 or more scores	55	21	06
5 or more scores	42	13	04
6 or more scores	30	08	02
7 or more scores	20	05	01
8 or more scores	12	03	00
9 or more scores	06	01	00
10 scores	02	00	00

Percentages of Students Exhibiting Giftedness

Table 7 lists the percentage of students who exceeded the 50th, 75th, and 90th percentiles on the ten BI and creativity test scores. From Table 7, 91% of the students in the sample exceeded the 50th percentile (were above average) on at least one score. This means that only 9% of the students did not have some area of above average strength, an area in which the student could be reinforced for above average talents. With additional talent measures, it is likely that areas would also be found where these students would excel.

An even more impressive percentage is that for the students who exceeded the 90th percentile on at least one score. Forty-seven percent of the students had scores that exceeded this level -- meaning that almost half of the students in the sample could be classified as being extremely gifted in some talent area.

That these figures are not being inflated by a cadre of extremely capable students is demonstrated by the fact that only 2% of the students exceeded the 50th percentile on all ten scores. This is further illustrative of the tenet of multiple talent teaching that not only are there areas of strengths for almost every student, but that no student is evenly or highly capable across all the important talents.

The data listed in Table 7 can be used to convince educators that almost every student in the school is gifted, and that this area of his giftedness can be used to help the student reach his/her potential. Guilford's model, with its 120 separate factors (specific talents), is probably too complex conceptually, but could be used to further illustrate that there must be some area of strength for every student.

In summary, I would like to describe what we in the Project see as happening at the demonstration school with our focus on multiple talent teaching as the main inservice teacher training thrust. The most evident are the structural changes in classrooms with increased opportunities for children as the school program has become more individualized, and as teachers began thinking in terms of multiple talents. When the project started, it was not unusual for teachers and administrators at the site school to be very skeptical about the possibilities of actually implementing a multiple talents approach to teaching and programming. However, the inservice program was geared to developing skills for multi-talent teaching, and by now, near the end of the second year, almost all of the site school teachers are able to relate personally to how "it would be done" and are "doing it" to some degree in their classrooms.

The main approaches to multiple talents teaching in the demonstration school have the following factors in common in our project:

- 1) Making the nature of each of the talents explicit so that both the teachers and the students knew what they were working toward;
- 2) Increased use of individualized strategies. These included the

use of centers, contracts, activity packages, and an increased use of media; 3) The integrating of multiple talents into every part of the subject matter curriculum. This meant that each topic in the curriculum is approached through the media of planning activities, decision-making activities, forecasting activities, creating activities, and communicating activities; and 4) The development of more systematic ways of communicating to children their talent strengths.

As teachers learned to increase their facility with the above factors, the following five phenomena were noted:

First, teachers began to actually talk about the talents of children more frequently. Second, parents began to report that they noticed a change in the tone of the school. They also indicated that they were more pleased with the program than before. Third, most of the classrooms in the school looked richer and more complex in terms of materials and activities available. Fourth, teachers began to be more confident in talking about things they might do to aid the disadvantaged or disabled learner. For example, there were many more approaches at the end of the project to the problem of providing appropriate instruction for poor readers. Fifth, teachers seemed much more confident, generally, in their ability to adapt their programs to new situations.

The multiple talent approach has made a difference at Hopkinsville Middle School where every child is a "gifted" student. We have tried to share our experiences through a series of occasional papers, resource guides to multi-talent activities -- based on our middle school experience -- and a film strip series. The film strip series includes an overview of multi-talent gifted education as well as teacher application of the talent areas in their subject area. We hope to be able to share with you some of these materials at this conference in the subgroup sessions.

100

IDAHO'S AWAKENING TO MULTIPLE TALENT TEACHING

Winnie Freeman
Ada and Canyon Counties
Joint School District No. 2
Meridian, Idaho

For a while it looked like our adjacent state of Idaho (Virginia Merrill's home state) would be one of the last to be interested, but suddenly this trend changed. I was invited to work with the Boise City Schools at the first of the school year a few years ago. Following this, we went to Idaho State University in Pocatello three different summers over a five-year span, mainly working with Professor Laverne Marcum and his program. This led to two return visits by task force teams to Pocatello schools and my trip in the spring to Burley and Garden Valley school districts. Just before that time I had met Winnie Freeman and invited her and two of her staff to come to my workshop and demonstration at Garden Valley, a beautiful isolated town north of Boise. She then requested that I recommend a teacher to work in a four-week summer program in Meridian. I recommended Ellen Johnson Williams who worked the past two summers in Meridian. Also, in between those two summers a team of Ellen J. Williams, Darrell Johnson, Beverly Lloyd, and Beverly Richards went to Meridian to a mid-year workshop.

S. The impact that Multiple Talent has had in our district is more evident this year as I review the curriculum units submitted during our recent summer session in Meridian with Ellen Johnson Williams from Utah. They are terrific!

Because of the training our teachers received from Mary Ann Zimmerman at the Bella Vista School, and from Darrell Johnson, Ellen J. Williams and Bev Richards from the Holladay School and using Igniting Creative Potential as a guide, we have been able to alter our approach to gifted education, particularly at the primary level by using Multiple Talent as a model. What we are doing is identifying those students who display the most extraordinary ability during four years of Multiple Talent screening, beginning with kindergarten. Each year teachers refer those exceptional students to what we call "Cluster" classrooms where teachers have been trained to teach to multiple talents.

When our facilitators serve those classrooms as consultants, it is sort of a weeding out process discovering that the needs of more students can be met in the regular classrooms. By the end of third grade, a comprehensive evaluation has been completed on all those students and the determination is made regarding future educational goals. There are many who need programs offered through special education, beyond the regular classroom, but Multiple Talent Teaching is minimizing that number. More and more

teachers are asking for training, and principals, recognizing the difference in teaching methods, are asking about next summer's program already. It is exciting to see the results of just one short year in the program.

This conference has convinced us more that Multiple Talent was not only the best teaching method for all kids everywhere but the vehicle by which we could identify truly gifted students. We are still searching for a creativity measure with standardization (Frank Williams will be sharing his version of Torrance on October 3 and 4) in order to meet criteria set down by our state department, but the assessment of superior strengths by our multiple talent teachers is still our most reliable indicator. The day will come soon, I hope, when we can look at kids and not so much at test scores. I am constantly doing battle with the state department over their criteria for gifted, which would eliminate the very kids I feel need special education most -- the underachievers.

Some Idaho Evaluations of Multiple Talent Teaching

"As a result of the sessions directed by the Meridian District SAGE Program, I have been able to incorporate the multiple talent model in my classroom. Granted, I have only used it in developing my units in art and in Creative Writing. I do seriously plan to implement this model throughout the rest of the school year. Unfortunately, it will only be used in my units, for I do not feel entirely confident. I need to take things a step at a time and gradually it will become a part of my teaching method. I am convinced that the multiple talent model of divergent, convergent, and evaluative thinking is the way to go." Liz Lejardi.

"My teaching outlook and practice has seen a "whole new world" unfolding! The multiple talent teaching has enabled me to return to my classroom of kids and shoot in creativity to my units -- that day or week!

My teaching day often had required little creative thinking. My kids often now remark -- Wow, this hour has really flown? These in depth levels of thinking were an untapped area and I'm just beginning to utilize them.

My planning of units is really changing the most. It's taught me to effectively plan units.

The talent teaching idea has excited me to put these ideas to use in all areas. I've been forced to decide what is productive and evaluate it in this light -- to get rid of busy work! I'm re-writing units!" Harla Jensen.

"There are two ways in which multiple talent teaching has been especially helpful to me. It has made me more aware of the different talents in learning and how effective reaching those talents

are in promoting interest in learning. Secondly, my attitude has changed toward the use of more "creative" type activities and feeling that there is "a" time and place for them rather than the fact that they can be and are just as important as cognitive activities and more importantly re-enforcement in learning." Eva VanCuren.

"No workshop has changed my approach to teaching more definitely than multi-talent. Each area of subject matter and each skill in my classroom is being evaluated, modified and redirected to this approach model. It answers my need for direction, for purpose. I'm more aware of goals and concepts upon which I should base all thinking and activities. Guidelines are flexible but within boundaries I find beneficial." Fran LaFon.

Idaho Visits to Jordan and Granite Classrooms

"The visit I gained the most from was to Mary Ann Zimmerman's classroom in the Jordan School District. She was using the multiple talent aspect to a great degree. Her units are all on an individualized program using all the Multiple Talent areas. The students made their own decisions as to when they would fit each subject area into the day. At the end of the day, they would evaluate themselves to see if their goals were achieved." Penny W. Hughes.

"In February of 1977 I had the opportunity to visit Mary Ann Zimmerman's fifth grade classroom. The students were working on a social studies unit written under the multiple talent concept. They were doing projects in various talent areas. Some were working independently while others were working in small organized groups.

I was amazed at how smoothly everything was going and also by the student's knowledge of the talent areas. After talking with several of them and noting the eagerness and enthusiasm which was present throughout the room, I decided I should try some activities geared toward multiple talent in my own classroom.

When I returned to my own classroom I immediately wrote a first grade multiple talent unit on "writing a Newspaper." Mrs. Zimmerman's units were quite helpful in developing ideas and understanding concepts. When I presented this unit to my students, I was not only pleased, but amazed at their response. Since then have written several other units using the multiple talent approach.

Although I had heard of multiple talent before my visit to Mary Ann Zimmerman's classroom, it had meant very little to me." Shelley Seewald.

"Our visit to Salt Lake last February was climaxed by the visitation to Mary Ann Zimmerman's classroom. The experience of seeing her in action with Multiple Talent was incredible! Aside

from her mastery as a teacher, she has also mastered great ways of having her children experience the Multiple Talent objectives. Her activities and entire curriculum were all interwoven and based on the talent areas. Her children are indeed experiencing the six talents to their own individual development of them.

Bev Richards (Holladay School) works with Guilford and Multiple Talent quite effectively in even the Kindergarten level. I was skeptical of how to use it at this level, but found that Bev has done it beautifully within her classroom. I benefited a lot from my visit with Bev as how to incorporate the talents into a non-writing, non-reading level of education. Her curriculum is well established and encouraging to me in working with Multiple Talent." Pam Hallvik.

"I am a first-year teacher and in my college preparation was never introduced to Taylor's Talent Totem Pole of Multiple Talent Teaching or any of Ellen Williams' ideas. I think that the idea of productive teaching skills can and should be used in a classroom with the whole spectrum of abilities. You may have to adapt the presentations for slower children, but these children desperately need these thinking skills! I find that most units I teach now contain some divergent thinking activities, some convergent thinking activities, some evaluative activities and some production at the end. I have been making word banks (invaluable at the 2nd grade level. This year I used chart paper -- next year, I'll use 8 x 11 posterboard so they can be saved longer.) I've gotten many good ideas from the books "Gifted and Talented" and "Igniting Creative Potential" -- I used the Magic Giraffe -- I use decision making in trying to solve classroom management problems -- and I've used lots of other ideas that I can't remember.

I really think that the idea of Multiple Talent Teaching is an important tool for every teacher and I wish that Ellen could come talk to an in-service session that's not named PAL (Program for Accelerated Learners).

My only other suggestions are that Ellen should come more often or move to Meridian!" Debbie Juola.

TALENT DEVELOPMENT IN NEW HAMPSHIRE

Leon Worthley
State Department of Education
Concord, New Hampshire

S. Since I do not have one single program in Talent Development, I will relate the type of activities that I am engaged in to facilitate the concepts of Talent Development.

In my role as consultant for innovation (ESEA Title IV) in the New Hampshire State Department of Education, I have the opportunity to help teachers and administrators conceptualize programs to better meet the needs of students. I have found the concepts of Talent Development, along with the theories of J. P. Guilford and Jean Piaget, to be extremely helpful in generating thought away from traditional curriculum and content areas to thoughts of developing the intellectual talents of students.

A variety of programs have resulted in New Hampshire which in some context have elements of Talent Development. Such programs come under the labels of Talents Unlimited (adopted from Mobile, Alabama), Aesthetics for Children and Teachers, Future Studies, Career Development, Project Adolescent, etc.

In addition, many classroom teachers have been exposed to the concepts of Talent Development through a series of Awareness Workshops that are held periodically throughout the State of New Hampshire. At this writing, I am negotiating with two colleges to teach a course in Talent Development. I am also offering the course at the Learning and Sharing Education Center, developed by my wife and myself. My proposed doctoral dissertation will attempt to show a correlation between creativity and the ability to perform Piagetian tasks in pre-school children.

This is a quick synopsis of my involvement with Talent Development. I hope the future brings me more opportunities to help in its development and progress.

UNDERLYING BASES OF MULTIPLE TALENT TEACHING

Calvin W. Taylor
University of Utah

S. In a recent article for Gifted and Talented programs, I listed several types of enrichments, as follows: 1) Knowledge Enrichment; 2) Experiential Enrichment; 3) Environmental and Situation Enrichment; 4) Multi-Cultural Enrichment; 5) Depth-of-Involvement Enrichment; 6) Research Participation Enrichment (Exploration); 7) Non-Intellectual Enrichment (Affective); 8) Talent Enrichment; and 9) Combinations of the above (or other enrichments). Each of these would be suitable not only for Gifted and Talented students, but also for all students to enrich their educational preparation for their future careers and lives.

Talent-focused education is comprehensive enough to include all of these other enrichments. Furthermore, we believe that it would produce by-products in most of these areas so that as teachers focus on talents, students become more involved; more of their potential human characteristics are brought out and classes become more humanized; more individualizing occurs and thus more individuality and humanity emerge in each classroom; and so forth.

During the development of the Multiple Talent Approach to Teaching, an awareness of the complexity of the human being increased, with the multiplicity of high-level talents reflecting the much greater complexity of the brain in both its structure and functioning. It became necessary to move away from the grossly oversimplified concept of "general intelligence" and its typical representation in a single IQ score toward a profile of many separate talent scores. Also, the teaching of several different areas of knowledge by essentially one-talent approach would need to be replaced by teaching many different knowledge areas by means of many different talents in the students. On moving from simplicity toward complexity, it was important that the approach be sound as far as its underlying basic research and its theoretical foundations were concerned. The new teaching approaches should be accompanied eventually by appropriate measurement technology to create a total system. Retention and incorporation of the good and essential features of the typical existing system were important in forming the new system.

The new teaching approach which could potentially become awesomely complex must be kept as simple and as feasible to use as possible, under the total circumstance, so that teachers would not be overwhelmed by it. The approach should be understandable and believable to teachers, students, and parents, as well as to educational administrators and legislators. It should yield better outcomes in its students across a wider range of accountability measures, with longer lasting and more positively transferable residuals in students at each progressive stage of the educational program. The

approach should ultimately yield an accumulating relevant personnel record on each student which contains a picture of his individual strengths and weaknesses, together with indications of growth. This record should be as valid as possible against career and life performances (not against traditional knowledge achievement scores) and therefore of value to the student in gaining self insight and self guidance. It should also be of value to teachers and counselors, to the community, and to the nation, as needed. The teaching approach should be economically feasible during transition and especially in the long-run costs.

From past observations and from the conference discussions, it is clear that the disenchantment with the traditional classroom programs is increasing. As a result, many diverging approaches have been emerging to break away from academic-only (IQ-talent-only) types of classrooms. Hardly any other programs, however, have as sound of an underlying fundamental research base from the human sciences as does the Multiple Talent Teaching Approach, nor have they had better (or possibly even as good) research results after being implemented and evaluated in classrooms. Furthermore, the talent-focused approach can team up readily with most other approaches, such as those in the enrichment list above.

A History of Multiple Factor Analysis and Multiple Talents

Let me set the record straight on factor (or talent) analyses done both within the IQ and way, way beyond the IQ. The contributions of L. L. Thurstone and his wife, Thelma G. Thurstone (one of the three founding trustees of the Institute for Behavioral Research in Creativity) should be more fully recognized. Professor Thurstone was a mechanical engineer, and then worked for Edison as a research assistant before "he saw the light" and did his doctoral work in psychology. He produced a theoretical mathematical learning curve as his dissertation. Thurstone's initial book in this area was called The Vectors of Mind (1935).⁴

It should be emphasized that the Thurstones initially analyzed the IQ tests into seven multiple talents (or Primary Mental Abilities), thereby demonstrating that the typical group intelligence test involves a complexity of talents. They also extended their research to cover a total of at least 20 and almost 30 Primary Mental Abilities or talents in studies of their own and of students in their laboratory.

My dissertation on "Fluency in Writing" (Taylor 1947) was the first factor analysis study in their laboratory to break away from separate-answer-sheets-only type of responding and scoring, yielding two new factors, namely ideational fluency and expressional fluency

⁴ Thurstone, L. L. The Vectors of Mind. Chicago: University of Chicago Press, 1935.

(verbal versatility) talents. Since then, I have been the main student of the Thurstones to carry on this part of their work on the analysis of the intellect into multiple factors (i.e., talents), together with the implications and implementations of these findings.

All these studies used multiple factor analysis techniques which Thurstone generalized from the earlier, more limited two-factor analysis methodologies (used by Spearman and others). Thurstone made factor analysis feasible for widespread computer use, thereby facilitating possible further analyses of the total intellect into a great number of high-level talents.

John French, then of ETS, held a series of two factor analysis conferences starting nearly two decades ago, which pulled together about 40 or so high-level talent factors isolated by then. At the first initial ETS conference I met Guilford for the first time.

Working from his own model of the "Structure of Intellect," J. P. Guilford then became the main person to move ahead after the second ETS conference to the 98 high-level talents found to date of the 120 currently estimated to exist in the marvelous and highly complex brains of all mankind. Dr. Guilford has just produced a new book on his works, appropriately entitled Way Beyond the IQ (1977).⁵

After helping develop the National Science Foundation Fellowship Program and its procedures and accompanying research program, I initiated and conducted a series of eight national research conferences on creativity. The emphasis in creativity tended to change in each successive conference and with a few notable exceptions, the list of creativity research participants also changed. The long mailing lists for our series of creativity volumes indicates hardly any interest in the education world until some time after the Russians launched the first Sputniks into space.

After that interest started to appear, with Frank Williams' help, I started a Utah series of 10 annual summer creativity workshops, mainly for teachers. This was followed with a series of four annual summer creativity workshops in Hawaii. In both the research conferences and the summer workshops, the creativity horizons widened and the total coverage also widened to include other important but largely neglected talents. All our research and development and implementation work had also widened to cover multiple talents.

⁵ Guilford, J. P. Way Beyond the IQ. The Creative Education Foundation, Inc. in association with Creative Synergetic Associates, Ltd., Buffalo, New York, 1977.

Our USOE Educational Theory Focuses on Cultivating Students' Attributes

Since this present conference follows along the line of things we have been advocating for many, many years, it seems wise to insert portions of our earlier materials to show the relevance of expanding features of talent-focused education. Consequently, an edited summary statement is presented below plus a model from our Educational Theory report requested by the U. S. Office of Education.⁶

As a result of our total experience in this educational theory project, we propose a series of five different perspectives (or frameworks) within which any educational program could be viewed in order to study some of the features it currently emphasizes, de-emphasizes, or ignores. Each of these perspectives will be introduced briefly in an overview. Some important features of all of these first four perspectives are incorporated in the fifth perspective, a 3-dimensional "educational theory" model which is the most complex member of the series.

A first perspective concerns itself with the identification and cultivation of all the nation's known human resources. A main question to be asked here is to what degree our educational programs are developing all of the country's important human resources. Creative and productive thinking talents may be the best of many possible examples of such human resources needed at this time.

The second perspective is indicated in asking to what degree our educational programs utilize scientific research fully in this important scientific age. We recognize two different aspects of this problem, namely R. and D. First, more basic research (R) is needed, in sciences basic to education as well as in education itself. Secondly, a greater amount of developmental activity (D), by what we call "educational engineers," is needed in conjunction with the research activity. In a program satisfying these needs, all research with important educational implications would be immediately followed up with adequate developmental work, to ensure

⁶From the final report to the U. S. Office of Education (Cooperative Research Project No. 621) by Calvin W. Taylor, Brewster Ghiselin, John A. Wolfer, Lorraine Loy, and Lyle E. Bourne, Jr., entitled "Development of a Theory of Education from Psychological and Other Basic Research Findings," University of Utah, Salt Lake City, Utah (mimeographed), 1964, 193 pages.

⁷See "Bridging the Gap Between Basic Research and Educational Practice," by Taylor, Ghiselin, and Wolfer, NEA Journal, January 1962, 23-25.

that the relevant research could promptly be brought to bear upon educational practices.

In a third perspective, education is viewed in relation to the actual world-of-work and life requirements. Certain requirements, such as creativity and productivity in scientific research organizations, may be found not to have creativity and productivity counterparts in science education. In our study of scientists in research centers and from one other study we were informed that the highest degree in science is the "on-the-job Ph.D." We were told that it takes three or four years to attain this degree after the academic doctorate, partly because some of the bad effects of our educational system have to be worn off and also because additional high level characteristics, needed on the job but largely ignored in the usual education program, must be developed.

In addition to world-of-work requirements, this third perspective can be broadened to include such things as the humanities and the arts and other life activities wherein creativity and expressional abilities can again be used to illustrate needed assets.

A fourth perspective is indicated in asking to what degree educational programs are giving persons greater self-awareness, self-understanding, and self-insight.

A fifth and final perspective involves a model for viewing educational programs. Curriculum activities often focus primarily on two things, both teacher-centered: namely, 1) on what the teacher (with administrative support) does in terms of teaching methods, instructional materials, setting the stage, etc.,; 2) on what subject matter the teacher imparts to the students. Modifying the current conception of this subject matter dimension by asking what subject matter is being acquired by the student, we would more appropriately place the emphasis on the student rather than on the teacher; and 3) the new dimension we add also involves the student, where we believe the major focus should be anyhow. This dimension pertains to the psychological processes, the learning and thinking processes that can occur and can be developed in the student as he is learning subject matter.

Psychometric research on high level abilities, as well as laboratory research on learning and concept formation, has increased to a rather large number the intellectual processes (i.e., the talents) which we can now identify. The main point is for the students to have the experience of using each

of these known learning and thinking processes (each of these talents) while they are simultaneously acquiring a variety of subject matter content in a total educational program. For example, students could have the experience of acquiring knowledge by creative processes as well as by memory or by the cognitive types of processes currently emphasized in schools.

Since students are capable at much earlier ages of doing many more things than they are doing now, we have wondered whether teachers might achieve greater status, not by striving directly for status for themselves, but instead, by giving greater status to their students. And, in consequence of this development, educational programs and educators might automatically rise considerably in public status and esteem.

A unique role which professional educators could fully assume is to learn how to have students use each kind of thinking and learning and thus to use each and every part of their minds while increasing their subject matter knowledge. Thus teachers would specialize in being "talent developers" -- in cultivating all the important human resources, especially the potential talents in their students.

In our three dimensional model we presented a broad concept of the human being, covering intellectual and non-intellectual (including physical) attributes of the students for cultivation in the educational program. In our initial implementation efforts, however, we have focused on the attributes called talents because of the great research progress on high-level talents that had already been accomplished.

In this three dimensional model now used of teaching approaches, knowledge acquired, and inner talent processes functioning in students, a double gain occurs. These two gains in students are: 1) the gain in knowledge plus 2) the improvement or gain in the functioning of various intellectual talents (and other non-intellectual and physical characteristics or attributes) in students. The educational outcome in each student would be the double sums of the gains in all knowledge covered plus the growth in all talents and attributes that have been functioning in the program. In other words we emphasize and want to measure and be accountable for growth in both, not merely growth in one of these two. This is what we mean by having a double-barreled curriculum in terms of what happens in the students.

We have often used Figures 3A and 3B to illustrate, by the location of 24 x's within each figure, how two extremely different ways could be used to jointly cover both the knowledge content and the talent processes in students for 24 classroom hours. Where each x was located, we could measure 1) a gain in knowledge and 2) a

gain in talent functioning. The first figure illustrates a systematic coverage of subject matter content together with an extreme imbalance in the coverage of talents, with all but one talent being ignored and neglected by the curriculum-in-action.

The second figure, in contrast, shows one of many possible examples of a more balanced coverage of talents with every talent being used one or more times while the knowledge content was covered in the same systematic way. In speeches we often illustrate this predicament by saying that students with potentially powerful, 16 cylinder minds are going through schooling that is asking or permitting them to use only one, two, or three cylinders of their minds. Our intent is to increase gradually, but continually, the number of these cylinders of their mind that are used in their schooling. Figures 3A and 3B appear at the end of this volume.

To our knowledge the Educational Theory Report which we produced unfortunately had little or no effect on the U. S. Office of Education. This can partly be explained by the fact that their Assistant Commissioner for Research, who had sensed the need for such a report, left the office for a deanship not long after we worked on the report. We have often felt that we were the only ones upon whom it had an effect and who followed through on it.

It appears to us that the typical curriculum specialist focuses almost entirely upon organizing a course of study in terms of the subject matter content, together with the instructional media and teaching modes of delivery of this content. Frankly, it seems that curriculum specialists who are so locked into thinking that curriculum is directly concerned almost entirely with knowledge and hardly with students-in-action are not highly aware of these new developments. In fact, most of the participants at this conference are reporting that considerable amounts of curriculum materials are being developed by teachers during in-service training in preparation for their own multiple talent classrooms. Perhaps this indicates that these teachers themselves are becoming more full-fledged professionals by being able to develop and observe the growth of students in their classroom through curriculum materials that they have constructed on their own for themselves. They are thereby gaining effectiveness and may well obtain greater status for themselves and for other teachers who fill the role of professional developers of the most vital talent resources in the youth of our nation.

Many traditional curriculum specialists, in contrast to the above, appear not to be aware of, let alone active in this curriculum development movement. Instead they seem to have been by-passed, whether they are at school districts, state offices, colleges of education, or academic vice presidents of colleges and universities. We suspect that many of them are still focused upon what knowledge is dispensed in what sequence and how this knowledge should be dispensed.

A Student Personnel System Can Focus Upon Talents (or Attributes)

Two main features of our totem pole type of approach are: 1) its convergence to only a manageable handful of major types of talent; and 2) these major talents have been carefully selected to be ones that are meaningful to practically everyone in society. Our most frequently used talents, such as communication, planning, and decision-making, clearly meet these two requirements.

In other words, at this initial stage the intent is to avoid asking teachers or personnel systems to deal with 20 or more ways to turn on one talent and to avoid dealing with 30 talents or 60 talents or 90 talents or anything of that great complexity. Instead, our typical totem pole approach (which obviously allows for different sets of talents) has not called for more than a handful of talents in order to make it feasible, understandable, and useful by teachers and school systems.

Our initial version has typically listed creative talent in the second, breakaway role, i.e., the talent which breaks away from the first (academic) talent. Creative talent also breaks open the way for other neglected talents to be included. However, it should be mentioned that the Mobile version of Multiple Talents uses productive thinking as the second talent. The productive thinking title is a broader one, encompassing the creativity talent, and may be a more palatable second talent, since there would be less debate that we can teach for productive thinking talents than for creative talents. Also, there would be less debate that productive thinking applied to all students. Nonetheless, both Utah and Mobile approaches use productive thinking as a starting point and work toward having students eventually use sets of talents in combination. Productive thinking is most often one part of the combination, at least in the first years of a project.

When persons are trying to become talent teachers we urge them to only try to teach for two talents at first; if they have not already taken such a breakaway step from essentially a one-talent classroom. Then they can gradually -- sometimes over several months -- expand to three talents, and so forth.

To restate these points, we are using a simplified system of only a few "large," broadly stated talents to which we have converged. While so doing, we readily admit that great complexity exists within each of our usual handful of talents. In fact, we realize each large talent may have 10 to 40 or more specific talents encompassed within its broad coverage. We act as if these many specific talents within each broad talent do cluster and belong together under a broad talent title, such as communication talents, which is undoubtedly one of the most complex of all the talents. Our basic research indicates that verbal communication talents involve over 30 different types of talents -- not counting non-verbal communication talents.

In a 12 or more year program it would be possible to focus on one handful of new broad talents for the first few years, a second handful of other new talents for the next few years, and so forth. Alternately, the emphasis could be to spend the first few years by focusing upon one subset of the specific talents within each of the set of six major talents the first few years and another subset of specific talents within the broad realm of each of the six major talents chosen for the next few years, and so forth. In this way, the students would cover each of the six talents initially selected in their full complexity, both more widely and more thoroughly in depth, and thereby cover the large majority of the 98 specific talents identified to date. Other broad talents could be added in the secondary schools together with most of the remaining high-level talents not yet cultivated.

I worked as a main consultant on a White House Talent Task Force in 1967-68. That task force was a great idea, but nothing much really came of the effort because the activities and the report production were treated as presidential confidential. This meant that only the President would release the report and he would do so only when he saw fit. However, a month before the report was finished, President Johnson announced that he would be retiring at the end of his term. Under these circumstances, he never managed to get the report out to the public -- it never saw daylight. No program visited was found to be primarily talent-focused. Instead, programs were focused on something else, hoping often only implicitly at best, that people's talents were being developed, almost by some kind of magic, as a by-product of their program.

As in the case of our Educational Theory Report to USOE, from our samples of evidence we likewise suspect that the White House task force team members were little affected by their work and findings on the national talent picture. Nonetheless, we have been one group that has followed through and sustained our efforts to bring about improvements concerning the talent identification, development, and utilization situation in the nation.

We estimate that less than 1/100th of 1% of one year's budget for the current grand total of our educational expenditures would be sufficient funds with the present readiness and technology to tool up a measuring instrument which could test and promptly yield a profile of at least six different talent scores on all students in the nation from fifth to twelfth grade.

Admittedly this present volume does not report the responses of students to talent testing nor to talent teaching. Invariably we have found that students, particularly in elementary schools, are the most ready for talent teaching. They are ready for talent opportunities as soon as the teachers and the system are ready to provide such opportunities to them. They become enlivened and involved in talent activities. They all become excited when they learn from a test that they have one or more high talent scores (as occurs for over 90% of them).

Last year and this year I have had Mary Ann Zimmerman of the Bella Vista School bring her 5th grade students, who are well trained by her in multi-talented functioning, to my 3 hour undergraduate class. She has been the teacher of the two classes combined and intermixed. Each time the experiences have been exciting to all members of both classes and to all observers. My college students have universally admitted and marvelled how the 5th graders have scored a major victory over them. The demonstration is obvious to everyone that considerable loss rather than growth has occurred in the thinking abilities of students between elementary schools and sophomore or later years in college. Orr Hill of Jordan School District in Sandy, Utah captured this second demonstration and the video tape can be requested from him in Jordan District's Media Center.

The Multiple Talent Classrooms Versus Unstructured Permissive Classrooms

One strong point to be made is that the Multiple Talent Approach is not on open plan, permissive, unstructured classroom. Instead, it is a multi-structured classroom with each structure eliciting a different talent to be functioning in students. It is true that each structure could fall some place within the range of being highly structured or much less structured, but still it would be sufficiently structured and properly structured to elicit and "mine" for a specific talent. Alternately, this multi-talent or multi-structured classroom has been called a multiple situation classroom or a multiple-setting classroom, with the teacher being a multi-structure setter, a multi-situation setter, or a multi-stage setter for the students.

-Another more realistic and more exciting description is that the teacher sets the stage so the students learn to become aware of and respond effectively to a variety of different types of opportunities. In other words, it is a multiple opportunity classroom in which students learn to sense and take full advantage of each opportunity by responding effectively to that opportunity through unharnessing and using the appropriate set of their talents.

Inner Talent Processes are the Essence of Inter-Action Processes

In this brief section there will be no focus upon how district offices and personnel interact organizationally with their schools. The hope is to have such interactions eventually filter down from the principal to reach and have some affects on the teachers and their students.

One might encounter the word "process" in education, in which the intent is that projects should emphasize process education. In this word "process," however, there is tremendous potential ambiguity. For example, it could mean 1) the process inside this teacher while dispensing knowledge and otherwise teaching class or 2) the process inside the teacher in preparing a lesson plan for the

next day or 3) the interaction processes between the teacher and individual students or 4) interactions between the teacher and subgroups of students or 5) interactions between the teacher and the total class or 6) the group processes involving the interaction among persons in subgroups or 7) the inner processes occurring within each student in any of the above situations. The last type of process is very clearly one that we could call the inner talent processes wherein the talent resources are within the person; alternately it could be called the talent processes or just the multiple talents in the individual students. These many talent processes within students could be working in any of the above types of interaction processes where there are exchanges among students or exchanges between teachers and students, but the focus would be on how each student's talent processes function and how effective his performances are rather than how well the teaching processes or the group processes are working. The latter can be considered means to the end of activating and developing multiple talent processes in all students.

The Multiple Talent Approach also involves the inner talent processes of teachers, especially the inner talent processes of teaching for talents in others. In interactions between teachers and students or in interactions among students, it is our conviction that the most important major variables accounting for the communicating and interplay that occur are primarily the talents of each individual involved in such interplay and only secondarily due to any unusual interaction of variables or team effects. In other words, if a teacher and a student had a lively interaction, it would be primarily because of the talents of each one separately and only secondarily due to the particular combination of the two persons.

Another use of the word "process" would be in describing the research processes and development processes and the implementation processes in bringing about change through scientific approaches. Studies need to be done to observe and describe all these research and development and implementation processes while they are in process.

For many months I have been consulting at Ohio State University on an NIE-supported project on transferable skills and characteristics, which we later titled transferable attributes. Thus, we could describe our teaching approach broadly as attribute-focused education, recognizing that our initial implementation efforts have been primarily talent-focused. To us, however, it is possible to stretch our thinking to conceive of a characteristic such as curiosity as being called either an attribute or a talent of curiosity. Similarly, we can also talk of a talent of enthusiasm, which is so valuable in teaching and in many other life activities.

Two other important points deserved to be mentioned. First, the talents of enthusiasm and excitement in the disseminator seem

to be highly important for implementation to occur. Such disseminators exude interest, dedication, and devotion to their work in contrast to those who show that this is merely another task assigned to them. Secondly, it is fortunate and important to have key administrators who are receptive to new ideas and who gain full insights and catch the spirit of enthusiasm toward bringing about successful implementation. Ralph Norris, who has always been a most supportive administrator, is now writing a book directly to administrators on bringing about major improvements in education.

Overcoming Obstacles to Implementation and Improvements

We follow the rule in salesmanship that it takes calls to make sales. The question comes up, though, as to how many calls it takes and why is the selling or buying often so slow? Persons who are basically researchers who have to try to become salesmen may be one of the explanations.

In experiences of Mobile, of the National Diffusion Network, and of ourselves, the excitement and enthusiasm and commitment of the demonstration teachers and of the in-service teachers have been most crucial in increasing the possibilities of acceptance and implementation and adoption of a new classroom program. Any spread through teachers in a school building is also affected not only by the manner in which the messages are formulated but also by the enthusiasm and personality and style of the communicator.

This total conference report touches at least lightly in the area where we have proposed many times to the U. S. Office of Education and to others that we be financed to undertake a Research and Development and Implementation (R+D+I) project in which we would work toward implementing the findings, at least on the talent of creativity. We would do the necessary developmental work to prepare these findings, procedures, and materials into implementable form. In such a project, we also proposed that we study and describe all the processes starting from basic research, through development, leading to successful implementation. Unfortunately, we were never able to get this double-purpose project funded, even though it was -- and still is -- sorely needed.

To implement talent teaching, I have given speeches in 43 states all around the nation and have made presentations to some of the staff of state offices of education in nearly 15 states. We have many teachers who can put on demonstrations with students in their own classrooms or in other classrooms wherever they are invited to visit.

About a decade ago I was invited with little advance notice to run a month's workshop for teachers in beautiful Whitefish, Montana (just west of Glacier National Park). I handled the problem by sending a different task force team of two persons each week for four weeks, being part of the team myself the first week. Since

then we have formed many different traveling task force teams whose trips have ranged from Florida and New Hampshire to Hawaii.

Another problem has been the difficulty for various reasons of getting a talent-focused teaching approach incorporated into pre-service training in schools and colleges of education. This means that the burden has almost entirely fallen upon in-service training of teachers after they have finished their pre-service training and almost invariably had some, and usually considerable experience in teaching their own classrooms of students.

Two tangible obstacles to implementation emerged in this conference. A first one was the reluctance, or even fear, of teachers to break the ice and start teaching this new way. In my own workshops with teachers, I have used our green manual entitled "Opportunities for Creativity and Communications," and have had the participants take turns being teachers in subgroups. This manual is so designed that others in the subgroups respond very quickly and positively to each selected activity and to the person being the teacher at the moment. Within a very short time all participants will have had their turn in teaching this way by using this green manual with subgroups. Then they not only get a feel of how quickly students will respond to this approach, but also how easy it is as a teacher to start to use these existing talent activities in classrooms.

Two other major concerns arising from the experiences of those at this conference is that unless teachers start to build multiple talent-subject matter units of their own at these workshops, they may never go back to their classrooms and implement the Multiple Talent Approach into the heart of their teaching activities. In other words, the tendency will be for them to do at least a few of these activities occasionally as a diversion from following their usual curriculum (the standard subject matter topics they must cover). The feeling on this second point is that they must build and integrate the Multiple Talent Approach directly into their subject matter curriculum. By writing their own units they will get multiple talent teaching started and planted solidly in their classrooms, rather than being a sidelight to their regular curriculum.

The interesting thing is that teachers are becoming curriculum builders and curriculum experts. In other words, they are taking the required subject matter curriculum and adding also, as curriculum, the Multiple Talent Approach, making the development of talents be an integral part of their total curriculum.

After visiting my graduate class, a potential new doctoral student in architectural psychology sat at a typewriter and composed the following paragraph. He suggests that we should have students practice improving things while in school if we really want them to improve the world after they leave school.

Your idea for changing the world through remodeling has set off some responses in my own thinking. One of the insidious aspects of formal education is the tendency to make people wait until they have been certified by the institution before they begin, if at that point, to produce changes in the world. It would be a great improvement if the educational process and the changing process proceeded simultaneously, particularly if the educational aspects were being driven by the perceived needs of the students for more tools, information, etc., to use in their ongoing production of change. That there can even be change is philosophically marvelous. Overcoming the feeling that change is impossible sometimes seems overwhelming. Like a centipede thinking about his footwork, those over-attentive to the process as it happens can become stultified and powerless.

Any profession, organization, or industry that wants to always keep themselves at the frontiers of progress and thereby in the mainstream of the future should be selecting and producing enough effective persons who are change-oriented and who can be change agents. This has alternately been described as oriented toward remodeling and revising things and thus being remodeling or revision agents, or more appropriately they may be described as improvement-oriented and as improvement agents.

On the implementation issue, indications are that training of new student-teachers is not effective in typical school-like classes where the to-be teachers are largely listeners, being required to learn-and-return the knowledge being dispensed. Such training does not develop relevant teaching attributes. Also, any in-service training of teachers conducted by the same learn-return classroom styles is not effective in either eliciting or improving many, if any, of the actual attributes of an effective teacher. A talent-focused program does call for intensive retraining of teachers because of the whole new approach which has emerged from basic research on creativity and other largely neglected, but highly important talents in students. After the training period, it has proved to be very inexpensive but highly fruitful education, with students as the main potential resource becoming more activated and more resourceful and effective.

After considering all of the above I am reminded of bureaucracies. To me a prime characteristic of a bureaucracy is that a system has been well designed and is running well internally as a system. However, close examination indicates that the system is well designed to make the work as simple and as easy as possible for the people who run it, but it is not necessarily well designed for the people who are to be served by the system. Furthermore, a bureaucracy tends to be happy with its own efficient system, so it is unlikely to seek out changes that improve the system for those it should be serving.

George Washington stated that it is difficult to bring about reform in an organization because you must do so through those who have been most successful in it, no matter how faulty the organization is. Why would they be highly motivated to change the organization which had rewarded them so well? Abigail Van Buren expressed this even more directly. She said that reform is almost never initiated from the top, because no one who has been dealt a hand with four aces ever asks for a re-deal.

A group of us visited a special school several times, largely on our own feelings that we thought they were receptive to the Multiple Talent Approach and something might come of our visits. One of their teachers signaled us in many ways that she was most ready for this new approach and was already moving with it. She recently met us and said that she found it advisable to leave that school because of the negative pressures on her. Then she said that the staff of the school had definitely stated to us that ours was a good idea. After we had left, however, they said to themselves, "but it is not for us." In other words, they had made a decision -- by mainly considering themselves, not their students -- that the approach was not for them. In essence, they also decided that it was not for their students. This meant that their students would continue to be deprived of having an educational program which focuses upon identifying and developing their multiple talents in order to help them become more effectively functioning persons.

Besides the ability to produce ideas, including some that may be quite creative, receptiveness to new ideas from others is a second important type of new idea ability. My recent experience with a planner was that his staff had suggested several times a particular new idea to him. Even though he had listened, he had always quickly set it aside and not given it any attention (some would say he rejected it -- that he didn't listen). I volunteered to try again after his staff had given up. As I met him for the first time, I used a broad sweeping indirect approach and set the stage for a flexible discussion before finally bringing out this idea. Then he reported honestly to me that he had never thought of this idea before (to me he had never taken time to put this idea into and through his thinking processes so that he had never really given any thought "on it" before). But as soon as he did think on it and think of it himself, he accepted it and started selling it immediately to his staff and to others as a good idea -- not necessarily claiming it to be his own idea, either. (He may have listened to it earlier and received it at the level of his knowing (cognitive-only) processes but not believed it or not bought it enough to put it into and through his own thinking processes, apparently a necessary step for him to become an advocate and seller of the idea.)

When all else fails to overcome implementation obstacles, then is the time to try a simple, direct approach -- a direct shot aimed right at the target. Such an approach, which is not fancy

or subtle, is to finish each in-service workshop session very authoritatively and very school-like by giving all the teachers an assignment to teach a given number, three or so, specified activities in a talent manual the next day in their own classes. As the school principal, Bill Hutchinson did this by telling four of his teachers to teach in his prescribed new ways for his dissertation -- and they did so, according to his resulting data. JoAnn Seghini also advised me that she is using this "prescription" method and is having over 90% of her teachers fill such an assignment each time she tells them to do so in workshops. This calls upon the teacher's well practiced, deep seated habits used throughout their own long school careers as students of doing the assigned work on schedule.

A positive note to finish this section emerged from Rosalind Hamer's visit last month to multiple talent programs in Utah. She is contemplating making a proposal with her sister in Iran for a gifted Iranian program. She recently wrote: "I am making plans to go to Paris in February to meet with my sister and develop our initial proposal for the Teheran School. We have agreed, via correspondence, that the 'total talent' model is by far the most attractive we have encountered."

In the meantime, I have conducted several workshops here in Portland (Oregon) for teachers interested in teaching for giftedness and they find your ideas very easy to grasp and very exciting. The beauty of your model is that it is so simple to understand and the idea of implementing such a model is not mind-boggling . . . rather it is inviting and promising."

Multiple Talent Teaching Has Broad Applicability

Talent-focused education can be used in nearly all educational programs. As a fountainhead of multiple talent teaching, we are as aware as anyone of all its possible uses and of the positive results that can emerge on different educational problems and populations. For example, our first application was in a Title I program and it is being used widely in programs for Gifted and Talented. Master theses have shown it to be very successful with so-called mentally retarded and also with emotionally disturbed students. Its best application is in programs for all students in regular classrooms.

Multiple talent approach usually wins in standard knowledge testing and, of course, also wins major victories in the area of development of multiple talents as well as having positive by-products in improved self concepts, involvement and motivation, individualization, and allowing more humanity to emerge in classrooms. The classrooms are thereby humanized and all children have the opportunity to work on all talents, including both their strengths and their weaknesses.

When Clayton Nielsen used multiple talent teaching in Granite District on a group of mentally retarded students and on another

group of emotionally disturbed students, he found that both groups flourished much more -- even in terms of the old yardstick of standardized achievement tests -- than they had under more traditional approaches. They did better when six different ways of teaching were used rather than when only one type of talent was used six times each day. He also showed that the students classified as mentally retarded are less mentally retarded in each of the other five talents than when they are kept at their worst in their worst talent in which they were found to be retarded.

A question arises as to what type of people are persisting and surviving in the educational system long enough to be potential applicants for graduate work. The evidence from Beverly Lloyd's project indicates that the people who tend to endure and survive the system are the teacher pleasers rather than people who do something of their own on their own, so we have programmed the survivors that way. By becoming efficient reproducers and trail-followers, they have not been well programmed to be effective graduate students -- that is, to be creatively productive on their own. We need to have properly trained, multi-talented people knocking at the door to become graduate students. Teaching for creative and productive talents will help in this problem.

A school can become both a personnel and an educational program with an expanding record on each student's coverage and growth in knowledge and coverage and growth in multiple talent functioning. Such a program focuses upon building excellent expanding profiles for each student, one on talents and one on knowledge, for future personnel uses, both within and beyond the educational establishments.

The military has separation counseling for all those returning to civilian life. They utilize the total pre-military and military personnel records in assisting the person to bridge into the civilian world of careers and occupations. Likewise, education could have better graduation counseling with each student at each graduation level, whether they are continuing in school or are leaving to enter into the world of work and life outside. In this way the educational establishment would be moving effectively toward identifying and cultivating more fully all of the potential human resources in the youth for their future functioning and utilization in our nation.

The Mobile project entitled "Talents Unlimited" is one of the main developers of this approach into a formalized program. It is a talent-focused project that has gotten on the U. S. Office of Education National Network and it has been rated one of the six best projects on that network. As an organizational innovation, we are developing several "Talents Unlimited" demonstration classrooms in Utah for those in the west who want to travel a short distance to see classrooms in action first-hand before going the longer distance to Mobile for intensive training.

The contributions of Gifted/Talented programs using a multi-talent teaching approach can range from those developing a best total program for a small percent of highly gifted and talented students to programs producing various powerful demonstrations, which could have a catalytic and leavening effect toward improving the total program for all students in all areas at all educational levels.

In running my own classes at the University level, I teach for talents and gifts. In that way that I approach, with strong evidence, the high level goal that POTENTIALLY ALL STUDENTS ARE GIFTED. This high concept statement can be true, especially if students are provided the opportunities to use a great number of different talents in classrooms to find the ones in which they are most talented (i.e., most gifted). Using fellow students as the only source of measurement, a total of 223 out of 225 of my students over several classes, have been nominated multiple times by peers as being in the top 8% of the class in one of the several talents activated and cultivated in the classroom.

Transfer of Training is Vital to Educational Accountability

With plenty of time to think about the project in between consulting visits to the Ohio State transferable attributes project, my confidence tended to grow that the data base from which we were already working was sound, as were the conclusions already tentatively reached prior to working with that transferability project. Consequently, I have gradually crystalized my thinking, after working from this enlarged and improved total base, and have grown in my convictions of the soundness of my earlier conclusions concerning Teaching for Multiple Talents.

Furthermore, with an assumption of less use and less retention of knowledge than of talents, my prediction is that less transferability occurs from knowledge-focused than from talent-focused education. Let's remember, however, that talent-focused education capitalizes on both, certainly more so than does knowledge-focused education. Therefore, I further predict, with confidence, that graduates of talent-focused education will be more employable, more knowledgeable, more transferable, more promotable, more useful, and more valuable than graduates of knowledge-focused education. All these issues should be settled by experimentation -- and I predict that talent-focused education will be the clear victor across nearly all of a wide range of appropriate accountability measures. Contrary to the pitch which I've been giving the Ohio-State project and its NIE monitor, we are getting remarkable by-products from talent teaching, an exception to the non-transferable expectations. It's as if we have found some central core in the person that does bring about transferable effects with widespread results.

In Project Implode the talent-focused school children beat those in the control schools all 58 times out of 58 comparisons

and 42 of these were statistically significant differences. So we're getting good by-products by even beating individualized schools in their own ballpark, even though that is not what is being focused upon. The Implode students did very well in knowledge acquisition. Students became very involved without calling it motivation training and were improving in self insight as by-products. Some students also go back and try to function better in the academic-talent way as a result of gaining confidence and successes in other talent areas.

Because of the great complexity of human beings, one cannot generally expect training on anything or in any place to transfer over to something else. This spread effect just doesn't occur very much and it is the exceptional case when it does so. Since the intelligence test found a large place in some minds, the thinking in education has been on the simplicity of the human mind. In reality, the so-called general intelligence is very over-simplified -- it covers only a very small part of the total mind. And the assumption that what you learned here would be spread all over the place is usually not sound. Knowledge does not readily and automatically spread and transfer into behavior changes. You have to teach in a different way from the way you have been taught if you want greater transfer and spread effects. So I'm arguing that we're moving into complicated ways which bring out more individuality and more humanity in all students.

Education is what a person has left to offer after he has forgotten what he learned in school, according to some astute observers. In light of the above, a person from his schooling probably can have much more to offer to himself and to others from having effectively functioning talents than from any lasting and working knowledge still retained from his schooling. Because great forgetting can occur when knowledge is not internalized, the "knowledge once learned in college" may be far less later than the knowledge possessed at the time of each test.

Students who have more fully developed many of their numerous talents, will enhance their chance to advance in their careers and in their life activities. We have predicted that they will be more employable, transferable, promotable, useful, and valuable as a result of having their multiple talents functioning effectively.

* * * * *

It seems advisable to mention briefly two other activities of ours which supplement and support the above approaches. According to our two decades of intermittently sustained research on physicians, all schools of medicine should stop selecting medical students. Then I phrase this differently as follows: All schools of medicine should stop selecting people who will be good medical students and start selecting people who will be good physicians.

Likewise our evidence is strong that all science areas should try to select and graduate persons who will be productive scientists in their careers instead of persons who will be good students.

Also we have created a world-pioneering program called Architectural Psychology and everyone has been favorable to this. Anyway we have had support from everyone on the idea of Architectural Psychology except from samples of two groups of people. Guess what two groups? Architects and psychologists, of course. What we've created is a new ballpark between the ballparks of these two professions. And the people who are in the other two initial ballparks (but not in the new one in between) are all performing professionally. They can continue to perform professionally by remaining where they are. But when we moved into the new ballpark in between, we were amateurs, novices. They stayed safely in their own ballparks and looked over to our new field and said "They don't know what they are doing -- they're performing like novices, not like pros." Anyway, in spite of their negative blessings, we have stayed in there at the frontiers being novices and kept doing things that had never been done before, thereby becoming leading novices, at times even pathcreating novices.

As a postscript, Connie Jensen, my long-time secretary, recently told me that when teachers produced the first multiple talent manuals, they initially had real difficulties in writing up the activities that they had already developed and been using effectively in their classrooms. Connie had been very efficient in learning from her experiences in my research office. For example, she had helped devise, polish, and produce for reproduction and publication many things, including test instructions and materials, training materials, research reports, and creativity books. In addition, she had learned how to produce final drafts of letters in answer to the wide range of topics and questions in our voluminous incoming correspondence. She brought these capabilities and insights into action in helping teachers prepare descriptions of their activities into written form, thus adding the extra talents and experiences that the team needed to produce the first volumes efficiently. This provided good experiences for the teachers so that they learned better how to do this writeup work on their own in later tasks. A lasting outcome was that these additional valuable professional talents were developed within these teachers from these pioneering efforts.

Another afterthought comes from a recent statement by Rachel Morton of Montdomery County Schools in North Carolina that "the deeper I get into the multiple talent approach, the more it seems that it fits just about anywhere when people are looking for meaningful innovation in education." This conclusion is strikingly similar to Carol Schlichter's comment on page 61 that "the fit of Multiple Talents in almost any area of educational programming is phenomenal!"

HISTORICAL PERSPECTIVE OF THE MULTIPLE TALENT APPROACH

Loran R. Reynolds

Reading Teacher, Central Jr. High, Granite District

S. I am presently working on my doctoral dissertation at Brigham Young University entitled "A History of the Multiple Talent Approach to Education." I hope to finish the doctoral work sometime in the fall of 1977. My remarks will therefore be from an historical perspective.

I have often heard it said that it takes fifty years for a new idea to make serious inroads in educational practice. It is therefore, interesting that some forty-seven years ago Lewis Leon Thurstone, Professor of Psychology at the University of Chicago, made the first serious break with Spearman's "g" theory of intelligence and hypothesized that the intellect was made up of a large number of diverse "Primary Mental Abilities." Using techniques of Multiple Factor Analysis, which he developed and made popular, Thurstone divided the I. Q. test into some seven different mental abilities and continued on, with the help of his wife, Thelma Gwinn Thurstone, to discover several other Primary Mental Abilities, more than twenty in all.

J. P. Guilford, Professor of Psychology at the University of Southern California, continued Thurstone's work of identifying individual mental abilities. After a total of some fifty mental abilities had been isolated by various researchers, Guilford developed his three dimensional "Structure of Intellect" (SOI) model, which became a "periodic table of the mind," suggesting a total of 120 mental factors. He continued to discover individual intellectual factors, using the a priori method of looking for factors where his SOI model suggested, and eventually discovered ninety-eight separate mental factors. Thus, the typical I. Q. test, once advocated as a measure of practically all of general intelligence, has now been shown to identify less than one twelfth of the entire intellect.

The only student of Thurstone's to seriously continue his work in experimentation with mental abilities is Calvin W. Taylor. He received his doctoral degree in psychology at the University of Chicago and completed his dissertation concerning fluency and flexibility of thinking under Thurstone's direction. After beginning his teaching career in psychology at the University of Utah, Taylor conducted a research project for the Air Force in which he and his associates isolated nearly forty verbal communication abilities, suggesting tremendous complexity in the human intellect.

However, Dr. Taylor later 'shied' away from that kind of complexity for implementation purposes and began to look for a

simpler model which would be complex enough to allow for the development of a wide spectrum of mental abilities in the classroom and simple enough for teachers to use. Starting in 1955, he organized and chaired the eight international creativity research conferences, and also conducted a series of ten creativity workshops primarily for teachers at the University of Utah. Eventually, working with Darrel Allington of the Granite School District in Salt Lake City, Utah, he developed "Taylor's Totem Poles," which employs six bands of mental talents which could be used as a model for the Multiple Talent Approach in the classroom.

Taylor's series of task force teams were then organized, including teachers and administrators, and started to disseminate the Multiple Talent Approach whenever and wherever the opportunities arose or could be cultivated to do so. Since the history of the development of MTA has been well covered today, I would like to characterize the efforts in several geographic locations and then make a few brief remarks about the entire MTA effort.

The development of MTA in Utah has been divided into three main localities: Granite, Jordan, and Salt Lake City School districts. The growth of MTA in each area was separate and unique.⁸

Granite School district can best be characterized as the "hang around group." Granite had an advantage in the early days of MTA development, supplying most of the people for Taylor's Task Force. However, no concerted effort has yet been made to make MTA a central part of the district's on-going program. Multiple Talent classes have been held and individual teachers continue to use MTA and a couple of schools have shown a somewhat concerted effort, but strong district support to nurture and develop a program has still been lacking.

Workers in Jordan School District are best characterized as "pioneers." Beginning with the efforts largely of a single teacher, Beverly Loyd, together with a supportive Principal Gilbert Stevenson, they were the first to develop a school wide effort, at Bella Vista Elementary School; the first to develop a federally funded MTA project, Project IMplode; and the first to involve MTA in the curriculum writing efforts at both the school and the district level.

Salt Lake City School District's MTA development is best characterized as an "effort from the top down." Superintendent Thomas became interested in MTA as a way of identifying and

⁸ At the time of this report, with the State Superintendent's support, nineteen of Utah's forty districts are at least beginning to do something with Multiple Talents and seven other districts have had at least one awareness exposure to this approach.

teaching the gifted and talented and with his school board's interest, an MTA program was instituted in seven and later eleven elementary schools, with a separate Multiple Talent teacher in each school, with eighteen schools planned to be in the program for the school year 1977-78.

Iowa's efforts in MTA exemplified "broad diversification." Project IMPACT, which began in 1968, eventually spread to include eleven counties in Central Iowa and became known as the Heartland Education Agency. As the effort spread, productive thinking and talent-focused education continued to be stressed, but it was mingled with other educational innovations, such as self concept development and humanization of education.

Alabama's Talents Unlimited (TU) project in Mobile could well be known as "Blood, Sweat, and Tears." Much hard work was put into the original three-year experimental project and the two year national dissemination project which followed. Talents Unlimited developed three lengthy, useful tools: the TAP book of classroom exercises for students, the Teachers in Training manual (TNT), and the Criterion Referenced Tests (CRT) which can be used to gather base line data and measure growth in Multiple Talents.

Wyoming has been a "brush fire" effort in MTA. Early efforts in Laramie and Cheyenne lacked full administrative support, but continued to smoulder, until a recent TU adoption in Cheyenne has brought the MTA effort in Wyoming to more full flame.

Minnesota's MTA effort is characterized in the words of a well known song "I've Been Everywhere, Man." Project REACH people from Pike Lake Elementary School in New Brighton have traveled as far as London, England to spread MTA and besides their own developments, have included in their project the materials and methods developed by Project IMplode in Jordan School district, Salt Lake City, Utah; Project Talents Unlimited from Mobile, Alabama, and the Creative Problems Solving Institute, directed by Sidney Parnes in Buffalo, New York. Pioneering work has also been done in the secondary schools at Milaca Middle School, Milaca, Minnesota, where a successful TU adoption is in progress, is producing curriculum materials, and is spreading.

Illinois could best be known for its multiplicity of projects. Illinois has had many MTA efforts in various parts of the state, led by such people as Bob Eberle, Principal, Edwardsville Elementary School, Ralph Litherland, Title IV Director for Carbondale School District, and Roger Taylor, Director of the Area Service Center at Governor State University at Park Forest Illinois. Leadership is presently being shown by the TU adoption at Peotone, Illinois.

Texas is unique in its rapid MTA growth across a wide geographic area, from Houston in the East to Midland in the West and from San Antonio in the South to Paris in the North. Talents Unlimited adoptions began at Waco, Texas and spread rapidly across the state.

Kentucky might jokingly be referred to as the "money bags" of MTA with its \$492,000 project at Murray State University and Hopkinsville Middle School. However, the important aspects of the project are the research design and the pioneering work being done in implementation in the middle school.

North Carolina has had noteworthy success in its use of MTA with gifted and talented students K-12 in Charlotte and Morganton. Recent TU adoptions have also developed in elementary schools in Goldsboro and Roanoke Rapids.

Recent MTA beginnings in other states today, around the country, many of whom were not represented here, might be characterized as "new beginnings with a bright promise." Among these are Florida at St. Petersburg and Fort Walton Beach, Georgia at Zebulon, New Jersey at Pitman, Michigan at Livonia, Massachusetts at Rocksbury and Merrimac, Missouri at Rolla and St. Louis, Indiana at Evansville, and Idaho at Pocatello and Meridian.

The MTA effort is mushrooming with a great bunching of effort in the last three or four years. Most of the MTA projects still appear to be young and fragile and need to be nurtured to prevent fading away from lack of inertia or from being swallowed up by the system. The educational system is remarkable in its ability to maintain the status quo against innovations. If the identifying characteristics of MTA are not carefully maintained, it could become another educational label without substance.

⁹ Copies of the 293 page dissertation by Loran Reynolds, entitled "A History of the Multiple Talent Approach to Education," can be purchased from him at his address in the List of Contributors.

A THEORETICAL MODEL FOR TRAINING OF MULTIPLE TALENT TEACHERS

Joyce Juntune and Leon Worthley
Small Subgroup Reporters

S. Teacher change is one of the essential ingredients for change in the classroom. Too often we as educators and teacher trainers fall into the snare of introducing teachers to a method or strategy without giving an understanding of why it is good and why it works. Soon the teaching coffers will be filled with teachers who have learned "rote" teaching strategy. When a teacher can understand a concept, make it her/his own, and apply it to various material being worked with in the classroom, then a new teaching strategy has been effectively learned.

Teachers remain fresh and alive if they are constantly growing on a good satisfying theory diet. The balance is very important. If there is too much or too little, the carry over application will be sparse or complicated with other things.

The model presented grew out of the experiences of the Pike Lake Elementary School In-service Program, Project REACH, St. Paul, Minnesota.

The theories suggested are very compatible. Each year builds on the knowledge of the previous year and clarifies ideas already presented. The solid core to which we must return each time consists of the theories developed by Taylor, Torrance, and Guilford.

It is important to have room for growth and expansion. This model will never be complete. New research will always bring us one more new thought or viewpoint. An exciting sidelight to Project REACH was the sparkle and growth observed in individual teachers as theory understanding balanced application strategies.

It becomes easy to stop at success. If we take our eyes off the goal of higher theoretical understanding, we soon will find ourselves in a dying rut.

Theoretical Model For Teacher Training

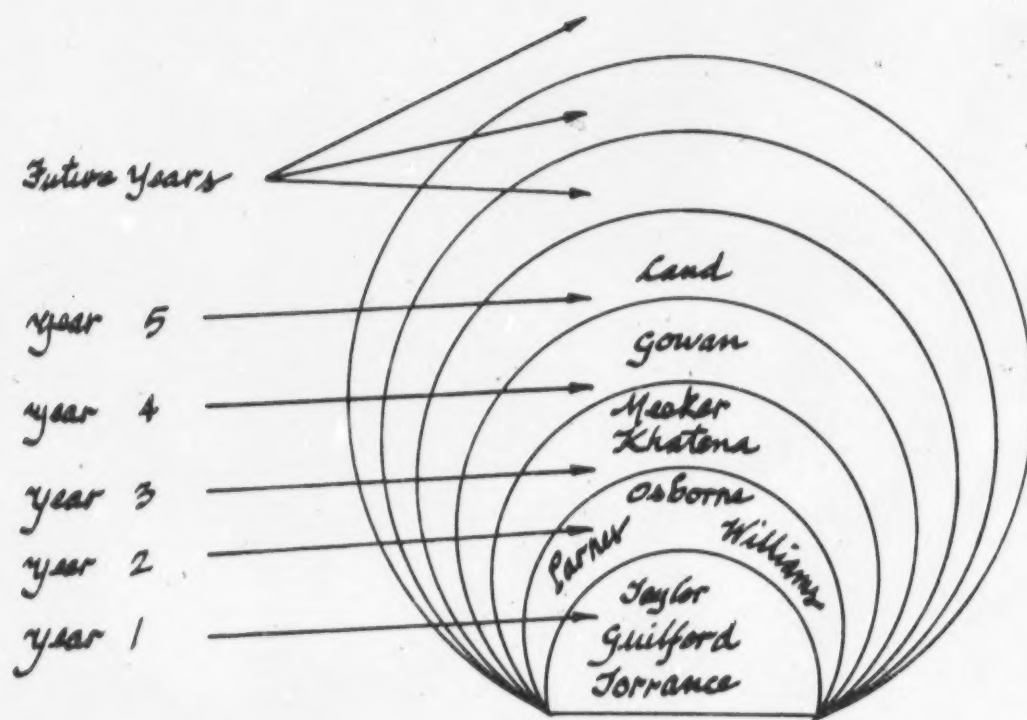


FIGURE 2.

SUMMARY OF MAJOR SUBGROUP DISCUSSION

Thaddeus S. Grimes

S. The two major topics discussed during the full evening were:
1) "Identifying multiple talents by testing approaches and by classroom performances," and 2) "Measurement, evaluation, and reporting of multiple talent teaching activities."

C. How does one go about identifying talents?

C. The research and implementation of the talent programs have provided some guidelines, but the best means of measuring is through the classroom teacher utilizing a multiple talent approach. The twelve years a kid is in school provides continuous observation for assessing talent ... at least academic talent. As far as other talents go, you really have to test for them.

C. How much talent training does it take for the student to internalize the behaviors so that there is carry over into later continuing of training?

C. This has not been researched. We have not researched, as well, which teachers will respond best to training, or which teachers will change classroom climate most responsively.

C. At what grade and maturation levels do students respond effectively to which talent areas?

C. There is some evidence that even first graders can respond. Thurstone set forth the primary mental abilities, but we do not know the hierarchy very well yet. Students may be responsive at a much earlier age than we think.

It was noted that drops in skills such as roller skating and bike riding are not very sudden. A drop in skill development may not be as sudden as the loss of knowledge.

In developing an art curriculum, skills must be taught in sequence, but cognition is not necessarily so. Learning about bike riding is very different from learning to ride a bike where the sequence becomes important. One can learn the various parts of a bike in almost any order.

Performance followed by verbalizing has not been as effective as performance followed later by more performance.

Taylor: Babe Ruth could hit home runs, but could not coach. That is, to hit home runs, he did not need to verbalize his skill.

Van Porter: You learn better by the use of a multitude of the senses. The learning becomes more permanent or imbedded.

Taylor: We have traditionally assumed that verbal performance is required for good performance in any area.

Van Porter: However, through the use of imagery some people may never verbalize.

Taylor: Some can verbalize and perform well -- others can't. The purpose of verbalization is to get a handle on it.

Van Porter: As in working with clay, the activity may be inherent in the person.

Wood: I had a situation where a teacher couldn't understand verbalization of a project, but when he was able to visit the project and see it, then he could understand it. Seeing it is believing it.

Taylor: Some people have been able to write activities from simple instructions -- never having actually seen one.

Wood: I know of an example of a coach who was coaching football -- through terminology he was over-coaching -- until his students got on the field and could experience it.

Taylor: We are dealing with "experiential education." What is that?

Van Porter: There is a division between fine arts and industrial arts: The fine arts deal with bringing in the creative idea before working the wood.

* * * * *

Some discussion ensued concerning the Totem Pole profile idea and reporting to parents by various people. The following points were made: 1) There is a profile idea and students can be shown to be higher in some areas -- lower in others; 2) Use columns of 4 circles -- marked with a magic marker; 3) A variation: we use three faces with a + on top of a smile if the score is very good and a - underneath if it is poor -- different colored pens are used to provide a show of change; 4) the teacher response to profiles has been good; 5) Parents know that they will get a talent report once a year; and 6) Can talents be reported on report cards? (No definitive answer.)

Taylor: There is a need for research and implementation to improve measurement systems, particularly with regard to: 1) Motivation of students; 2) Measurement problems, logistics, etc.; and 3) Reporting grades from six different measures.

C. Efficiency is a problem -- is the time spent scoring justified by the results?

Taylor: The more time and detail you put into measurement, the more return you get in data correlations.

C. Do we have an obligation to parents to let them know what's happening?

Van Porter: You must let parents know in order to get the parents on your side -- for support and for more money.

C. As a parent, I want to know. I want to know what you are accomplishing and if it has integrity.

Taylor: In dealing with parents, their experiences don't include some of these explorations. Our interest lies more in relevant new areas with crude measures to explore. The unknowns are important -- identifying what we don't know and admitting it are crucial. Yet, if a student says, "I don't know," we give him trouble.

Hainsworth: What would be wrong with a report card showing some of these to explain and describe this to parents?

C. Yes -- we do this in parent meetings. We explain it in everyday life examples.

C. Do you do this verbally? Answer: Yes. How do you reach parents who don't come to the conferences?

Hainsworth: Several ways. We developed a "Blue Book" called "I Am Talented" and these went home with the students. In a parent conference, the child conducts the conference using the blue book, backed up by the advisor -- this gives the kids more responsibility.

C. We could not get the inner city parents to come. We recorded a talent activity on a cassette. The students could check out a recorder, take it home for one night and play the cassette for the parents. Parents became interested and started coming to the school after hearing the tape played by their own child.

C. Getting back to the faces -- why have frowning faces on the bottom of the totem pole? What not change the faces to smiles?

Taylor: Reporting -- we try to provide some way to get people together to struggle with productive thinking talents and find ways to solve the problems.

Hainsworth: We don't know how valid the measurement instrument is ... the grossness of the program is such that we are reluctant to score these on a report card. We need to indicate a behavior area where the parent can be supportive in it.

Van Porter: The game with talents is developing the ability to process.

Taylor: If the teacher is dealing with them -- she has more time to observe the students in six to nine week periods.

C. We are not teaching for talents sake, but to improve the acquisition of knowledge.

Taylor: At dinner we discussed the importance of developing talents for life. But we are dealing in great complexity. In measuring communications, we get 82 scores in +'s and -'s, and that doesn't include reading and writing skills.

Hainsworth: Kids get a D or F on report cards, but score high on talent scores.

C. We use a breakdown of score areas into conduct, notebook, homework, etc. Students want to know -- what's the use of doing this if I don't get credit for it? If you want to know how to get the parents there, you have to work through the students.

Van Porter: The activity itself should be the reward -- what's in it for me? This question shows lack of preparation for creativity. I do not believe in paying teachers who do not motivate students to want to be in their class.

The more senses you can get into an activity the more you can involve the student.

Take math -- how do you motivate in math? Use lots of gadgets, gimmicks, etc. You can teach the multiplication table in many ways -- get the students to brainstorm ways -- gumwrappers, arrays, etc., etc., etc.

Waldrop: There's a continuous learning center in Mobile County for dropouts. They filled one whole board with adjectives by students participating in the process. They use lots of pictures of students and bulletin boards.

Taylor: We are talking about external versus internal motivation. We never claimed to be running a motivation course, but we get it as a by-product because of the deeper involvement of students. If you are willing to do a new experiment instead of the same old ballgame, you can have a frontiersman experience. Where do you want your uncertainty and your imperfections to lie? By preparing students to face uncertainty, to explore, to discover, and to be challenged; you need to constantly share fresh materials, and ideas, and encouragement.

DISCUSSION OF MULTIPLE TOPICS

General Subgroup

C. Let's talk first about talent tests and scores. After we've administered and scored these tests, we rank students from highest to lowest in each one. Then each teacher deals with this information in a conference with parents. Rather than trying to give parents anything resembling exact figures, it's more of a general sense of telling them that their child really is a good planner or he has some real potential in productive thinking skills. We preface our remarks by saying that we have assessed your child in these particular talent areas and we are working with all our students in all of these talent areas and teaching for these talents to function. We have found each student's strengths. The parents are obviously going to say, "Well how good? In relation to what?" You don't have to tell them that their child's score is a 14 in a reference to 20 possible points but only that's where their best area of talent strength is. That's how we handle it.

C. Instead of using the faces and smiles, we just have plain round circles with the kid's names. Just the three circles, one above, one in the middle, and one below, for each of the five new talent areas. Later as we retested again we used a different color of pen to color in the appropriate circle so we can see where growth is taking place.

C. We can get another set of scores based on teacher observations during various talent activities in the classroom. We can also get total talent category scores from the tests for each of the talent areas. This year we did pretesting early in the school year and posttesting in the spring. From now on we're thinking of just testing in the spring. We use the criterion referenced tests from Mobile.

C. So you would only be reporting once a year.

C. We just use the three faces under each of the talents, if they're way at the bottom, we write in a minus under the bottom face after we color that face. If they're exceptionally good, then we write in a plus on top of the smiling face.

C. The plus and the minus aren't in to begin with, but you add them when appropriate so you really have a five point scale.

C. In these ways we can see if there is growth. In many cases we've seen that once students start feeling good about themselves, they are going to increase in other talent areas as well. In April we will be doing a third set of tests for everyone, so then we'll have five different colors so we can show growth. We compare across years. Of course, you could also compare the first of the year versus the last of the year if you want to do so.

C. Also it is possible just to insert the numerical scores instead of using the smiling and frowning faces.

C. What about the profile you show to the parents?

C. We don't show them a profile.

C. At conference time when we have the student with one or two of his parents, we can let him show them his talent profile.

C. Then they can all see where they've improved. Yes, the kids see and know their own profile. The test profiles go to the teachers in the home room. The home room teacher can build profiles, too, from her observations of students across the different talent activities. They can do this weekly or monthly or whatever. Of course, the teacher's set of profiles can differ somewhat from the profiles obtained from the tests.

C. We had to give the teachers feedback, especially for a teacher who is spending her valuable time and has to cover a regular curriculum that is tight, tight, tight. Some of them become very up-tight. We also ran into writing problems in the lower elementary grades. We cut down on the number of tests per talent and the number of activities. The teachers or sixth graders or parents or someone has to help them in the writing. If the teacher spends a lot of time giving the tests and helping in the writing, she cannot be expected to tolerate a six month delay in hand scoring. So we put in \$200 to have a college student score the tests.

We report one talent at a time to the teacher for her students as we finally get such a score. But what you still have to do is to show the teacher that this poor little old kid that the teacher is used to casting in the corner is doing quite fine. And even only one talent up to average or above average for him is fine.

C. Remember when I showed you that what the teachers do in their own classroom with the child only reveals some of the things being found. But to report once a year to parents, it takes effort and a long time to do this. The parents know that they'll get this only once a year and that the next June, the report is going to change.

C. Were you referring to a report card?

C. We have official report cards every nine weeks.

C. We're interested whether you could report talents on a report card.

C. During our earlier discussions we were talking about 1) some of the theoretical issues in identification and measurement and evaluation. We didn't get into 2) the broad topic of success versus failure, nor into 3) experiences where we reach some teachers and

don't reach others. We have touched other topics of 4) the verbal and non-verbal talent processes in students and 5) what processes are occurring in teachers to turn on the talent processes in students. Now we're starting to get back to measurement and feasibility, i.e., building something that's comparable that measures what's actually happening in classroom and making these new measurement processes feasible.

C. In building all new measures of work performances we always team very strongly with the experts in the field. For example, we have built some devices for measuring the performance of residents in training in surgery. The faculty and physicians have been dumbfounded by the number of times we've revised that system until we've finally got it so it's working quite well. But it has taken us three or four years to do that.

It has become clear here that we need a three day conference or a conference each year for two or three years on these different topics to focus more fully on them and get some solutions that are both sound and workable.

C. You could have your measuring scale arranged horizontally instead of vertically with five or seven degrees along the scale, using faces or descriptive words or numbers or combinations of these as the degrees (or categories) along that scale. Every program can have its own variation.

C. We're doing it horizontally and having the kids respond in mass

C. What do you do when you report single grades when you're teaching all these ways and have a profile on each one? I tell my students it's a beast of the problem if I see you function six different ways and then have to turn in a single grade in our university grading system.

C. I also hear that many of you are overwhelmed by the amount of data you collect and the vast scoring efforts called for in your evaluation and research verification types of studies.

C. Our evaluator was wondering about the efficiency issue, i.e., if the time spent scoring all these tests really justifies the kind of scores you get in the end anyway.

C. In our basic research on communication talents, we produced a graph that should be published widely. The more detailed and expensive scoring we accomplished on the data from students on paper-and-pencil tests, the higher the multiple correlation we got out of those scores against the criterion target of communication performances in live, world-like situations. Our results were for 24 machine obtained scored tests versus 35 machine-scored plus other easily hand scored plus other more difficult and costly scored tests. In each case there was a definite increase in the amount but only cases where the test is easily scorable, you lose some and when you go only

to answer sheet scoring you lose some more. It's a case of how much you want to put into more testing and more difficult scoring and how much returns you get for those extra efforts. The issue is "how much of the criterion target is hit (the criterion performance accounted for) by adding additional test scores more costly to score?" The task is to decide as to what validity level you want to perform and how much effort you have to put into it or not put into it to perform at each of these validity levels.

C. Do we have an obligation to parents to specifically let them know what's happening with their children and if we do, are we sophisticated enough at this point to do it in a way that has integrity?

C. The quickest way to get more money in your system is to get the parents on your side. We've gone to advisory groups. And they're smart cookies. If you don't keep parents updated on what you're doing, they won't trust you any more as educators.

Sara's program has created a parent book and Project Implode in Jordan has a parent book, both designed to get parents on your side. The sooner you get the parents right in with you, shoulder to shoulder, the better, because I believe that the first persons to know in the whole world should be the parents. In our county multiple talents is an excellent program and we can get more money because we get the parents in with us.

C. I'm thinking about the parent who not only wants to know what you are doing, but also especially wants to know what you are accomplishing by doing it. I think we need to talk and to work a little on how we could do that. How do we let that parent know not only what we're doing but what we are accomplishing. How do you create your total system to have such integrity?

C. We all realize that parents have been educated in old systems and have had their experiences within certain bounds. Part of our problem is that we're frontiering or boundary-breaking into new areas that are unexplored and unknown to them in their experiences. Do we then retreat back to their areas of experience or do we explore ahead?

A second issue concerns precision versus relevance. I've said many times and in many ways, that I'm interested in measuring new and as yet unmeasured or even unmeasurable things. I want to try to measure them, at least crudely. You have to start out crudely, like a novice. I'm more interested in getting new crude and not yet precise measures that are relevant than more precise, existing measures that have little relevance for the new things we are doing. The as yet unmeasured things might be much more important than what is already being measured, but have been postponed or neglected because we didn't know how to measure them yet. I am unimpressed with things that have high integrity internally, are precise, reliable, and so on, but are not nearly as relevant or are not covering anywhere

near the total areas desired. I am willing to play crudely by working into new areas for the sake of doing it and am willing to look like a novice in the process rather than retreat or remain like a pro in the old areas. I'll function crudely with parents and with students in classes so they'll get a bit of a feel that we're going into the unknowns and I want them to go with me. This can be a new experience for them and they might find it exciting and might learn how to function and live better in these challenges and uncertainty areas.

Four of us recently talked about the unknowns as a new experience during lunch. They all showed a shock effect at that suggestion, saying we can't do that. But within a few moments we were doing it, taking turns just doing a little bit at a time. The two others who participated were pleased with their performances and realized that such sessions can occur in their classes by admitting to our students that we don't know, but let's start talking about what we don't know and take our students with us by having them join in the discussion. Then the third one, who observed closely but didn't participate, said that we're trying to help the teachers say, "I don't know," and have them start thinking and working in that new unexplored area with their students. But she said, if a student ever says, "I don't know" in a classroom, we give them all kinds of trouble.

C. Back to the report card question, we put all kinds of attitude things on the report card, such as whether the student is a good citizen, whether he follows directions, whether he goes to the bathroom correctly, whether he participates on the playground. In our project we have a check list of about 100 things which we observe in students. What would be wrong with a report card reflecting some of these kinds of things that we're recording right now on the students?

C. In our program each department has its option, and some asked if they could try to incorporate some kind of a talent report along with the other variety of items they have in their progress report, probably not a full totem pole thing. Perhaps they could merely state what the student's strong talent is -- or that they are very good in such and such talents. Or that their planning talent is being used very wisely in the sciences or in math or something like this. Perhaps give only a positive report on talents.

C. We do the same with our teachers. We give their two strengths or their most improved areas.

C. In your conferences, do you explain to parents what each talent area means? How do you describe them? Do they seem to understand it?

C. We give them some pre-service or in-service beforehand through advisory counsels and PTA's so they do know.

C. Do you connect what students are doing in school, talent wise, with what they will be doing later as adults, like the parents are now doing?

C. I have a very good friend of ours that lives right down the road from me. I just happened to mention one day to this parent that "your child is a good planner." As I was elaborating what I meant, I suddenly realized that I was putting them in somewhat technical educational term things, even though they are really things we do every day. So when you try to explain it in every-day language, whether it's to parents or children, they can understand it a whole lot quicker.

C. Do you do this verbally to the parent? How do you do this with the parents you can't get a hold of?

C. That's what we're really lacking, but we have at least 90% attendance at our conferences.

C. Our area is a little different. We have a greater degree of difficulty in getting parents to come for conferences. How do we get that information to those who don't come?

C. We are finding that parents are relaying the message to other parents.

C. We have developed our little blue book which says "I am talented." We use this to in-service our kids right from the beginning in their home rooms. Afterwards, we encourage them to take these home and share these with their parents. I am sure that on the bus, some got lost or they were devoured by lockers, etc. But at least we made an attempt in this way. The child always conducts the first conference. He brings his parents and he interprets everything: the SRA scores, his progress reports, the talent profile, and everything. The advisor is there to back up and give reinforcement to the child. In so many cases when we show these, the parent would say, "That's why you're always so good in doing these kinds of things at home," and they picked it up right away.

C. They've given the kids more responsibility in the talents strength. At home they say "It's terrific. They really can do this."

C. But I'm sure we do have some parents who don't understand it: the parents of the kids who didn't take their talent book home, those who didn't come to the conference, etc.

I submitted a new proposal for next year on parent's involvement. We're going to make an all out effort to get every parent into school. We're going to provide, if we get the funds, babysitting service, transportation, special individual invitations out to them -- the whole works.

C. Let me share a strategy which evolved in an inner city area where they could not get parents to come for conferences or even to visit the school. The teachers decided to let a little cluster of children do a talent activity which was recorded on a cassette. Then each member of that little group who did the activity had a chance to take home a tape player and the cassette for one night. Charlie's mother and daddy would call in the neighbors, "Hey, come on over. Charlie's on the tape." That gimmick reached more parents, and they said it worked. After the parents once realized that Charlie was doing something very exciting and his teacher had sent home the tape, then the next step was for the parents to want to go to school and see Charlie in action in school. And it spread and it worked.

C. In one of our inner city schools we had the same problem. We had parent study groups, but nobody showed up. However, the little home activity booklet that you were talking about tells the parent exactly how to do the different talents with their child at home in a life related way. The parent becomes the trainer at home and they all get in the act. And the parents do understand it; it's just really getting down and trying it with their kids.

C. On another point, if we were teaching self awareness and "to accept yourself, your strengths and your weaknesses, as you are," why do you have a frowning face on that? Each face should be an acceptable one.

C. You mean you would just go from a flat face upwards?

C. Yes, if you are teaching them to accept themselves and their strengths and weaknesses; don't put any frowning faces on that.

C. There goes your punch line, Cal, you always say "Change the frowns to smiles."

C. At times I say to take turns frowning so that others can take turns smiling. At other times I say "let's have them learn to function better in their areas of weakness and turn their frowns into smiles."

An expressed need here is for a real sound system of measurement. The set of Form U scores have validity and a high level of efficiency, in terms of readily answering it, getting it rapidly scored by an optic scanner plus a computer, and getting the feedback scores in a form in which you want it yourself -- or would want it for passing on to the teachers and parents. Maybe the same kind of thing is needed on report cards or for counseling or whatever you should desire. Apparently some of you need to try things and struggle with your experiences until you find all features you need in a system for it to be feasible and acceptable.

As a case in point, colleges of medicine abandoned grades after they heard our kinds of results on physicians versus medical

students. They went to an oversimplified pass/fail system, but they never asked for recommendations from us researchers. If they had, we would have recommended more measurement on a wider band of attributes rather than less measurement. With the system we now have, the post-M.D. residents like to get feedback every six months on how they've done on each two-month rotation. They are quite interested in getting a lengthy report on how they've done, a detailed report on a multiplicity of things. The Department Chairman now has a tangible record of progress to refer to whenever any issues or questions arise, including whenever anyone writes for a recommendation on a resident. But at the medical college levels with only pass/fail, they have practically lost all measurement.

C. Our people are not really that confident on what that test (or any test) is going to do until we try it and check it out for ourselves to see how it works.

C. Sometimes we don't know how valid a test is, just like we accept the IQ score and yet we don't know if it's valid. It has a lot more limitations than we used to think.

C. What we seem to be saying is that we're not willing yet, at least, to put down on the official report card that a student has a creativity talent or a planning talent and so forth. At least nobody here has done it. Maybe it is because of the grossness or perhaps the relative infancy of our programs. Yet everyone is willing to put down a letter grade or other grades on social studies, language arts, etc.

C. We have not trained the public or ourselves or our school systems very well yet on the notion of error of measurement and how fat the errors (both unreliable and non-valid errors) are in our measurements. We need to let people know somewhat like the weather reporters, that it is a 20% chance of snow or 10% chance of sunshine, not an all-or-none (100% or 0%) measurement (or prediction).

C. Would you expect that the teachers should then do some formal type of talent testing after each nine weeks or each quarter or semester or just base the talent performance scores on their own observations?

C. If you are truly teaching for the talent areas during an entire quarter, then you almost automatically have some kind of performance data that tells you how much or how well they've done.

C. That's not the game you're playing with talents. The game you're playing with talents is that you develop the ability to process, you develop each talent process. It is not writing sentences, it is not solving a set of math problems, so it's not quarterly, it's eternal.

C. If the teacher is teaching for talents and the student action is occurring and the teacher has more time to be observing and if the

teacher sees talent actions for nine weeks (that's 45 days), then it's a lot of observation you've got as an experience base from which you ought to be able to make some kind of report. That's the kind of thing we're doing with these surgical residents. We're having the trainers tell how the residents are doing in lots of characteristics and we're getting multiple physicians reporting on each of these residents in training.

C. I think the students themselves could be keeping some of these records, once they get up passed a certain level. We are reluctant to plug into the evaluation system so many of the new things that we try to do in education. This means that the new things don't really have any value in the minds of the parents until we get some of them plugged into a recording system for parents. Until it's a part of the evaluation structure, parents are not going to take it too seriously. Even if we expand the evaluation system in schools, some parents will only want to pay attention to the part of the report card that will tell whether or not their child will be able to get into and through college. So ultimately the evaluation system should be expanded clear through higher education.

C. But aren't we developing the talents for the purpose of better functioning in a system in their acquiring of other knowledge. Which-ever talent is going to assist them to be better in science, that will be reflected in their report card by underlying their grade in science, won't it?

C. At dinner we were talking about how we were trying to develop talents so they can function not just with knowledge but function during life. And talents reflect themselves in the grades for knowledge right now.

C. I guess that's what (or all that) we're reporting right now. I mean once it is internalized, like Sara said, it's going to come out in the work-a-day world.

C. One of the dilemmas we have is that if you go across six talents for one area of knowledge, a person is not going to have a single score, but a jagged score of six talent functions with each knowledge area. Then you have to give them the average score across his six talents or the highest level he can perform using his own best talent in working in that knowledge area.

One thing of which we should all be aware is that we're dealing with great complexity anyway. In our communication research we only sampled expressional verbal talents, we didn't go into reading and listening very much. We got numerous scores, which converged through factor analysis into 30 or so separate dimensions of communication talents. In our last study we got 82 scores as people went through 27 tests and they were mostly new communication experiences for them, even though they were college students and had had 13 years or more of language arts. They enjoyed the challenges of experiencing all these. Then we gave them back 82 scores, a string of 82 plusses and

minuses. They were dumbfounded with the number of scores we got on them. For example, one person might have received 50 plusses and 32 minuses, so that he was clearly, overall, an above-average communicator, but certainly not in everything. It is this kind of complexity we were in, so he would probably end up in the total communication talent area with a smiling face, maybe close to adding a plus to the smile. Hidden under all that, however, is a lot of complexity. You've got to be willing to skate on that ice and give some kind of an overall crude score or only a few subscores separately combined from all those 82 performance scores.

C. I'm not quite sure I understand the mechanics of the way you are working in your talents program in your middle schools. For example, if a science teacher teaches six classes a day, does he see different students in each class so that he has 100 or more students per day? What I am trying to find out is how you handle the testing in your situation. Does this science teacher test and score the talent tests for all these students or does he observe the functioning of at least two or more talents in them all.

C. We obtained the computer-output profile of test scores from the Form U biographical inventory. In our program, what we did was look for the unique talent, the maximum unique one for each of my 189 students, which in turn we tried to check by doing activities in the classroom in each talent area. And we came out with some kind of surprising things to my way of looking at a talent -- a lot of the test scores didn't jell with what we saw.

Then after we had checked this by going through each of the separate talent areas we went back and told these students about their talent results and said "Okay, you're in this particular area, and we have a learning center in the room which is made up of different talent activities. We want you to work in the learning center to take those specific activities for that one talent and work with those." That's the way we have personalized it.

We check it on a pass/fail basis and we watch what happened to it and we haven't been able to keep up with it completely because we just don't have the time, but we try to check to see if there is any progress in this particular one little talent area. We have a system where we use circles and minus and plus marks. We also mark when we see if the student is improving in that one talent.

C. I'm concerned about a kid who goes through any program and is doing well in one talent area, but yet his overall scores is a D or an F. What happens then is that he gets an F on his report card and no place do we tell the parents on the report card that he is good at that talent (in a way similar to checking a good attitude or something else on his card). Someone has to break through this barrier if we are going to say that this student has talent and is worthwhile, which may really make a difference in his life. We just can't keep going along only giving him a series of single F's across

subject matter courses with no comments about his particular talent strength.

C. It is important to break things down, like in science for example, where we have a section on tests, daily scores, laboratory work, behavior, use of materials, and so on. It's not just a single grade like an F; they get evaluated in each one of these things and they're bound to be stronger in some areas.

C. I think you could go just one step further, but not to the point where the teachers felt that they were burdened with having to give and score some kind of formalized talent tests to know this.

C. I think that observation will do it -- the very thing teachers do in their class.

C. Let's forget about all this evaluation mess for a minute. One of the things that has sold me on talent activities is if I have a student who is making D's and F's and I give him a particular talent activity and he does a dynamite job on it, I say, "Great!" That kid then may go up in everything (or at least in some other things) which reflects on his report card. If we go one more step and also put his talent performance on the report card, that is okay, too.

Even if nobody else but the student knows he's great in this, maybe we can accomplish a whole lot right there. Now if we can ever get this over to their parents, too -- which involves a whole lot of other ifs.

C. Some of our kids have asked our teachers: "How much credit do I get out of doing this?" "This is just to help you in what you're doing in the curriculum." The kids then ask: "What's the use of doing it if I don't get any credit for it?" It's just like some teachers ask: "What's the use of doing this if I don't get payed for it?"

C. That's why I try to make my talent activities worth something in the curriculum.

C. This has been our big hangup. We had an open house. A lot of our parents who came to the open house want to grab a teacher by the neck and say "Why did my kid do this, this, and this?" We told the parents that we wanted to present our program to them and try to familiarize them with what we were trying to do to help our students by trying to find a talent that they have and to build upon this talent. Then the good things that they do in this one talent will flow into affecting the other talents and help them in their subject matter areas. They say if the students don't get credit, you're wasting your time because you're doing something that hasn't a payoff and you're not doing what we pay you for.

We discussed how we get this across to parents. We tried messages in the newspaper plus a newsletter and we phoned about 20

interested parents and had them spread the word. But still we only had about one percent of our parent body turn out. I'm amazed that some of your parents are so understanding.

C. Maybe we've got to work with students and worry about the parents later.

C. That's how I feel.

C. Something very important is that if you are a good teacher, your students are motivated. They never ask what I'm going to get out of it; the activity itself is the reward. So Sara has written the talent activities to start out with motivation. You have to be a fandangler; you have to commend appropriate attitude, appropriate dress, appropriate preparation to motivate the students so they never get to that point of asking why do we have to do it. About 95 percent of my talent students out of a total of 1,500 I work with during the month will applaud when a talent teacher comes in the door wanting to do the activity. They look forward to a chance to do the activity. I've never heard that type of thing before, "What's in it for me?"

That's not the attitude for getting good internal creativity. Creativity comes from the kids' desire to participate. That's the essence of the whole game. The student has to have the desire to participate; you've got nothing with talents unless you've got that internal desire. You are opening up that door and the kid is just bubbling out with desire to put his effort down and especially if he's never had a success before. His effort will just flow and that's the essence of art and that's one of the reasons I'm hanging in there with talents. It is important that we strongly start with motivation and that's why I have 300 to 400 of the 6th graders when they get to be 7th graders who sign up for art. I don't believe in paying teachers who do not motivate people in their classes. In other words, kids sign up and flow to the classes they like; they flow and sign up to the classes in which they think they'll do good.

C. But motivation is or can be a by-product.

C. You can't compare art with some other types of things. In art, for one thing, youngsters have a tangible product they can look at which they've created. It's a little more difficult in a subject like mathematics or the teaching of some other subjects. I think it's much different so that it is unfair to make a comparison between the two things.

C. This discussion started when we first said to use multi-senses to increase your knowledge of anything. This is really the whole thing, starting when you use your eyes, use your ears, use your brain, use the seat of your pants. In other words, the more senses you can get into an activity, the quicker it's going to be internalized so that you'll never forget it. And art is not always getting out your crayon, art is also criticism; art is analysis; art is discussion.

C. Are you going to have those criticisms and those analyses without having a product first?

C. You do not always have to produce a product in art; see, that's one of the misconceptions.

C. Not always? Can you provide tremendous motivation for a youngster to be using criticism without having some experience in producing a product?

C. I can take reproductions of a number of famous paintings and lay them on the floor; I can have kids just rush up to, select their picture to take home with them.

C. Can you get them to rush up to get a math problem. That's the whole problem of why kids are so lousy in math and reading. That's why I believe kids are so strong for talents because our academic schools are not successful. We've had academic parents; we've had academic schools for years and years. My mother had a very good saying for it, "You could be educated up to here but you were an educated fool if you could not tighten a screw -- you could not make a living." This is one of the reasons I'm into talents also and that's why I appreciate the talent approach because it unfolds all of those intellectual things that we're not using in the academic realm.

C. But how about mathematics?

C. Some fantastic things can be and are being done in math. From sharing an office with the math supervisor, I know what he has done. But we must remember that it can or should take two to three hours of preparation for each activity taught and if different levels or different subjects are taught, no wonder teachers are having difficulties in this old game of getting the kids interested.

You know why kids are in the math class? Because it's a requirement. They need it to graduate. I don't want art people in the art class for that reason. I want art people there because they want to be there.

C. After you've done that tremendous art activity, the kids are all excited about it and they have enjoyed it. I have no argument with that. But as the art teacher, how do you evaluate what they did?

C. You're getting in to how to evaluate a divergent product? This is the gimmick that's breaking my back because every activity is a divergent activity; no one kid has the same answer or product as another kid.

C. But I want to know what you are doing in your program to give feedback to the kids in response to what they are doing, whether it's a critique or a process yielding a product.

C. I have a structure to art, though many may not think there is a structure to art. There are several complex factors, and we do have elements, and we do have art principles, like concepts that are higher than the pieces. There are gradable things in an art product just like there are gradable things in an activity. It's not easy and there's still a lot of controversy as how you can grade something that's never existed before, and our activity answers have never existed before. These are answers that the kid has cranked out and of course such answers have been kicked under the table and under the seat by many conventional teachers. These answers are the ones we give A's and A+'s to, right Sara?

C. Let me help defend art. I was observing a second grade classroom in Michigan and the teacher said, "I'm going to do the activity out of your text called 'All the different ways to say 10 or 100. I'm going to let you all choose the number.'" The kids said, "Let's do 15." Half the kids went to the chalk board and half stayed in their seats. They started recording on the board all the many different unusual ways to say 15. And they filled those boards, those little second graders up there. Some climbed up on chairs to fill up the top of the board. One little fellow started doing this bit with regrouping but the teacher said "You can't do that. I haven't taught you that yet." But he was doing it; he was regrouping and his teacher didn't even know what he did now about math until she saw it with her own eyes. Now that is math and this is productive thinking and that teacher could count the many different ways and get a score of how many different ways each child could say 15.

C. I can agree with you completely, but in modern math they found out that there were concepts that youngsters just didn't know well enough to apply in a practical sense. For example, they didn't know their multiplication tables well enough in modern math, so they are now going back to using the academic talents to attain a certain knowledge base that they are not achieving. That's the portion that I'm talking about.

When it comes to a youngster learning some basic facts and tools that are necessary, such as the multiplication tables, it becomes much more difficult to come up with some gimmick that will motivate him or her or inspire some enthusiasm. There are certain aspects of mathematics which work very well with the way you're talking, but there are other aspects which are much more difficult.

C. When working with some third or fourth graders on multiplication tables, we challenged them, had them brainstorm many different unusual items which they recycled and built a chart to demonstrate the multiplication tables. A whole world was just opened up for young fourth graders. Don't tell me they didn't learn multiplication and have it all together! It didn't take a long time either because they were working, they were excited, and they were challenged. We have had them so turned on we couldn't turn them off. We had to leave a chart up on the wall so they could keep recording the ideas they had. It can be done. This is why our two schools

have been rated first and second in our district. When you're working with talents, they won't come in cold.

C. I'm in secondary schools and students get used to certain things and certain ideas in the first six grades. But in the 7th and 8th grade, in the very awkward stage -- puberty is the craziest thing in the world -- you start to try to get them to open up. They are very self conscious; they usually haven't opened up before.

The most creative person I know is not as creative as he used to be, as a three year old boy, yes, even if he's as creative as anybody can be. Children are probably more creative at those ages than at any other time. It would be fascinating for me to get some of those students that some of you have been working with in the first six grades.

C. There's a continuous learning center in one county where kids who have been suspended from school have another chance to adjust and improve themselves. They only go to school half a day and it's an individualized program, with a lot of counseling. These are kids who couldn't make it in the regular school environment. I was told if anyone could turn those kids on, he could do anything. Once I walked in cold to an 8th grade English class and as fore-casted, I got the cool cat stuff. But then we did a communication talent and those kids filled up that chalk board with adjectives to describe two characters in a story that they had just read.

Next I turned them loose on an independent activity. I made one of them the chairman of the committee and they whipped out the most beautiful bulletin board you ever saw. So we sent a photographer over there and took pictures of the bulletin board and we got three phone calls before those pictures were developed. They were dying to see their pictures -- they were turned on.

C. I'm willing to toy with the idea that motivation is a talent. If we are talking about teaching for talents, teaching for creativity, teaching for changing other people's behavior. I think you were talking about teaching for igniting their motivation talent, teaching for involvement in the students.

C. Yes, teaching in a special way for motivation in the students so that the motivation is not imposed but is occurring out there in them. My students are talking about internal versus external motivation. I heard internal motivation mentioned briefly early in this discussion but I think some may be thinking about external motivation, namely motivation imposed from the outside rather than getting it from the inside of the students. Ultimately you want it to be coming from inside of the person rather than imposed from outside. In our case I don't think we've ever claimed we're running a motivation course, though some other people claim they teach motivation. I suspect that we can equal them in the results on motivation by running a talent-focused course because I think many of us

are getting motivation and involvement as a by-product in our classes. We get them thinking and suddenly they're involved in it and suddenly motivation is there from within them.

We just lost a girl from Brazil as a graduate student. She said that in her graduate classes too much of the motivation was teacher imposed. There was no faith in the teacher that the students would do anything of their own and she suspected that the teacher didn't want them to do so, anyway. So she went back home saying that as an undergraduate in Brazil, students were having more internal motivation and more support from their teachers than was occurring here where the motivation was largely imposed by teachers. It was kind of a hard blow for us to realize this -- though I hasten to add that she liked my creativity seminar, her first course in our department, and really turned herself on in it.

The old system isn't so perfect, it's an experiment, it's a practice, educational practice. All of you had asked to go into a new venture of developing talents, into another new experiment, instead of repeating the old adventure. But in so doing, more things have opened up for you than you had anticipated. One big frustration in the new adventure, the thing that's blown some of your minds, is the whole problem of measurement in all kinds of areas, identification by tests, identification by classroom performance, evaluation of teachers, evaluation of student performances of various kinds by various people, feedback, program assessment, and all these kinds of things that have unexpectedly arisen as part of the ball game. If you retreat back to the old ball game, you will have none of these new measurement problems in that old adventure. But you've opened this keg of worms by being willing to teach for multiple talents. Now you've got to be playing the whole ball game and manage to do so in some way within some time period. You need to find a way to handle the measurement problems a little until you can move to the next stage.

It's a frontiersman kind of experience which the parents have not had, and which the students have not had and some of the parents are begging you to go back to fit their past experiences and old habit patterns.

Let me say this in a new way. It's really a question of where you want to have your uncertainty, where do you want your imperfections? You can go back to a "perfect system internally" with integrity internally which has been practiced a long time. However, if you check that system against the external world, there is a lot of uncertainty, there's a lot of inefficiency exposed in that system, a lot of room for improvement when student performance in the old system really show little or no relationship to career performances and life performances. If you retreat to that old system, as a lot of people do after they try to take their students "off campus," you may start finding that in many ways, it's a lot easier to return to campus to the classroom, and ignore the problems and great uncertainties that exist between the two worlds. It's a harder game to go off

campus (or into new curriculum approaches) and make meaningful experiences for students -- it's just a different ball game. You can see why people retreat to classrooms on campuses. But the old system, which seems almost perfect internally from a myopic viewpoint, is far from that when you check it out from the larger view. If you bring that uncertainty into your classes and prepare people for working the world of uncertainty by being frontiersman, the students can love or learn to love that thing. They like the futurist slogan that today is the first day of the rest of their life, rather than teaching them all about the past which we hope will magically transfer and something good will somehow, as a consequence, happen to them in their future life. By bringing that uncertainty in to the classroom and having some crudeness and some bigger errors internally, you will not have as much error and uncertainty between your system and the rest of the world.

If you retreat to the certainty, it's an artificial, unreal certainty you've created but the uncertainty is between that system and the real world. Do you want that kind of uncertainty in your system? The issue is, where do you want the uncertainty primarily to be?

C. I've run many research and workshop conferences. In this one it appears as if many of you need catharsis for all the problems you are encountering. You really need to be sharing your materials and ideas and to be getting new leads and courage from each other.

C. We have some good things to report and I still think that this conference was designed to also express some of the concerns and issues we face. We have struggled in a middle school for a year and a half and have not solved all our problems. We have solved some, and if anyone of you solves all of yours, please let us know.

C. Except for one other small subgroup, we have created this large subgroup and have wandered across the topics because of all the problems that were there. I'm just trying to take stock of the state of affairs. It is now clear that the schedule should have allowed for at least another half day to allow these issues to be discussed and tackled more fully.

C. I agree with you that about this business of having taught some of the basic skills by using all the different gimmicks. But when students come to the 7th grade, they don't know those things. Are we then going to have to stop and let them go back through the initial process of learning? We feel that by the 7th grade, they ought to know certain things so that we could move ahead and use activities that would develop them further.

C. But all over the country children are lacking in basic skills right now in math, in reading, and in other fields. That hampers us and that is one of our main problems.

C. But I can do without a textbook. Yet we have a lot of parents who are textbook oriented. If they don't see a kid come home with a book, what on earth are you doing with them in school?

C. But how many parents can read that book?

C. Well that's true they can't, but as long as students carry a book home, the nervous system of the parents becomes less nervous. I can provide more activities than a textbook can and I feel them to be more relevant.

C. Some talent-focused people are going back to clean up these kinds of handicapping things you are talking about. Sara is working with Title I types of teachers and so are Beverly Lloyd, Joyce Juntune, Coleen Yatckoske, and others. They are creating materials and workshops for training teachers to use multiple talents as a better way for helping students to learn how to read. The concept of the basic skills needed could be broadened to cover the basic, but very high level talents in most multiple talent teaching. The broadened concept would be the basic skills and talents.

C. Rachel Morton recently stated that "I keep asking myself why I am constantly approached by folks involved with gifted education to do workshops, etc. I keep saying, 'but my Talents and Teaching project is not a project aimed at the gifted alone. It is across the board for all students.' Yet when I do talk with teachers about the 'multiple talent approach' and life-skills, I find that not only am I in their ball field, I am also told quite frequently that what I have to say makes more sense than anything they've heard so far. As a novice, I have enough sense and humility to know that how I present what I believe in is not what 'speaks to the hearts' of these teachers and administrators. I am convinced that what they have heard and been taught about academic enrichment has not convinced them that this is what we ought to be doing for our gifted youngsters."

C. Students have expressed some exciting quotable insights when they have had experiences in using their multiple talents. For example, Sara Waldrop reports that when a child in Mobile was asked what it meant to him to be in the talent program, he responded, without hesitation, "Talents burn a candle in my mind."

After Dr. Shirley Warner taught a talent class in Putnam City, Oklahoma one child wrote "I liked your class a lot because it gave me fluency and it made my brain feel refreshing."

Two Extremely Different Ways of Distributing 24 Class Hours
(With an "x" for each Class Hour)

FIGURE 1A

DIFFERENT TALENT PROCESSES IN STUDENTS

	Academic Talents	Creative Talents	Communication Talents	Planning Talents	Decision Making Talents	Forecasting Talents	Other Type of Talents	TOTALS
Language Arts	xxx							xxx
Social Studies	xxx							xxx
Humanities	xxx							xxx
Arts	xxx							xxx
Biological Sciences	xxx							xxx
Physical Sciences	xxx							xxx
Mathematics	xxx							xxx
Other Subjects	xxx							xxx
TOTALS	xxxxxx	0	0	0	0	0	0	24 x's Grand Total

CONTENT ACQUIRED BY STUDENTS

FIGURE 1B

DIFFERENT TALENT PROCESSES IN STUDENTS

	Academic Talents	Creative Talents	Communication Talents	Planning Talents	Decision Making Talents	Forecasting Talents	Other Type of Talents	TOTALS
Language Arts		x	xx					xxx
Social Studies		x		x	x			xxx
Humanities	xx	x				x		xxxx
Arts		x	x				x	xxx
Biological Sciences	x		x		x			xxx
Physical Sciences	x	x		x				xxx
Mathematics	x				x	x		xxx
Other Subjects				x	x			xx
TOTALS	xxxx	xxxx	xxxx	xxx	xxxx	xx	x	24 x's Grand Total

CONTENT ACQUIRED BY STUDENTS

Figure 3A & 3B
The Two Student-Centered Dimensions of Content and Processes

Table 8

Simplified Checklist for Identifying Children With Multiple Talent¹⁰

This checklist has been designed to assist teachers in their observation and identification of children with multiple talent. The checklist should be applied after a group of children have been given a specific task which clearly allows them to demonstrate their proficiency in one of the six given talents.

Scoring is based on "sten rank" (standard tens). Similar to a "normal curve," a given percent of children fall at each rank when compared to one hundred children representing the broad population.

	<u>Low Score</u>					<u>High Score</u>				
Sten Score	1	2	3	4	5	6	7	8	9	10
About . . . of the pupil population	2.3%	4.4%	9.2%	15.0%	19.1%	19.1%	15.0%	9.2%	4.4%	2.3%

Circle Estimated Rank

ACADEMIC - LEARNING:

1 2 3 4 5 6 7 8 9 10

Understands, learns with ease, remembers well - Knows about many things which other children are unaware - Advanced vocabulary development - Performs academically ahead of class

Key Behaviors: Searches - Locates - Recognizes - Summarizes - Recalls Reproduces

COMMUNICATION:

1 2 3 4 5 6 7 8 9 10

Expresses self readily and clearly, understood by others - Uses colorful verbal and written expression - Makes needs known, understands the needs of others - Relates and responds to others who function at higher levels of thoughts

Key Behaviors: States - Informs - Explains - Conveys - Gestures - Shows

¹⁰ This checklist using Taylor's set of talents was adapted from: Eberle, Bob Classroom Cue Cards for Cultivating Multiple Talent, Copyright 1974, D.O.K. Publishers, Buffalo, New York 14214. It was submitted as his contribution because he was unable to attend the conference.

Table 8. (continued)

PLANNING - ORGANIZING:

1 2 3 4 5 6 7 8 9 10

Understands the need for sequence and order - Plans and organizes his work and play - Systemizes well, has a step-by-step procedure for doing things - At times, demonstrates complex methods and procedures for dealing with information

Key Behaviors: Plans - Schemes - Plots - Orders - Arranges - Destines Integrates

FORECASTING - PREDICTING:

1 2 3 4 5 6 7 8 9 10

Reasons things out - Sees associations, implications, and consequences - Has keen insight and the ability to look into the future and predict or foretell the outcomes - Has an understanding of human nature and of causes and their effect

Key Behaviors: Anticipates - Estimates - Foresees - Guesses - Assumes Perceives

CREATIVE - PRODUCTIVE:

1 2 3 4 5 6 7 8 9 10

Has much going on, engaged in many projects - Curious and inquisitive, wants to know about things - Work tends to be a "production," contains much detail - Expressions are novel, unique and away from the obvious - "Has lots of crazy ideas"

Key Behaviors: Invents - Composes - Designs - Produces - Creates - Originates

EVALUATION - DECISION-MAKING:

1 2 3 4 5 6 7 8 9 10

Gathers information and weighs evidence - Recognizes influential conditions or events - Makes good generalizations - Prefers to make his own decisions - Shows superior judgment in making decisions

Key Behaviors: Concludes - Decides - Selects - Determines - Chooses Examines

(Bottom section may be detached)

PROFILE:	Academic - Learning	1	2	3	4	5	6	7	8	9	10
	Communication	1	2	3	4	5	6	7	8	9	10
	Planning - Organizing	1	2	3	4	5	6	7	8	9	10
	Evaluation - Decision-Making	1	2	3	4	5	6	7	8	9	10
	Creative - Productive	1	2	3	4	5	6	7	8	9	10
	Forecasting - Predicting	1	2	3	4	5	6	7	8	9	10

NAME OF PUPIL _____ GRADE _____ TOTAL SCORE: _____